

FINAL

**SUPERFUND COMMUNITY
RELATIONS PLAN FOR**

**National Aeronautics and Space Administration
Jet Propulsion Laboratory
4800 Oak Grove Drive
Pasadena, California 91109-8099**

January 1994

1.0 INTRODUCTION AND OVERVIEW

1.1 OBJECTIVES

This document is the *Community Relations Plan* (CRP) for NASA's Jet Propulsion Laboratory (JPL) *Superfund* site in Los Angeles County, California. The CRP is a formal plan for USEPA community relations activities at a Superfund site. Superfund is a common name for the Comprehensive Environmental Response, Compensation and Liability Act (see Section 1.3 or Appendix C. Glossary). The Community Relations Plan (CRP) summarizes the history of the site, identifies current community issues and concerns regarding the project, and summarizes site-specific activities to address these concerns. Detailed site and project information are available in the Work Plan which can be obtained through NASA (see contacts listed in Appendix A.1) or the *Information Repository*. The Information Repository is a file, conveniently located for local residents, that includes current information, technical reports, and reference documents on a Superfund site (see Section 6.1.1).

The purpose of the CRP is to lay out the mechanisms for informing and involving the public in activities and decisions related to the JPL Superfund site. The term "JPL" is used throughout to refer to the facilities located at 4800 Oak Grove Drive in Pasadena, California. Terms appearing in the text in bold and italicized typeface are defined in the glossary in Appendix C. This plan was developed in accordance with the U.S. Environmental Protection Agency (USEPA) guidance Community Relations in Superfund: A Handbook, Directive 9230.0-03C January, 1992. The overall objectives of this Community Relations Program are to:

- **Inform the public of planned and ongoing actions.** Providing information to the public will include making information *accessible and understandable*. The community relations activities will inform the local public of the nature of the environmental problems at the site; the risk the site poses to public health, welfare and the environment; alternatives and remediation responses under consideration; and the status of all project activities.
- **Educate and provide sufficient information to the general public on the Superfund site investigation and remediation process to enable the public to have meaningful input in the decision-making process.**
- **Provide sufficient outreach to the general public to ensure that information on the site and site activities reach as wide and diverse an audience as possible.** The community relations efforts will help ensure that all members of the general public have sufficient access to information and are kept informed. Community

relations efforts will be tailored to the distinct needs of the surrounding communities while being tied to the technical schedule of activities.

- The implementation of the Community Relations Plan will **provide the public with the opportunity to express their concerns and comments** on the site investigation and response activities. This plan will provide mechanisms for *two-way communication* to ensure that a dialogue exists between public and responsible government parties. Two-way communication will provide the public with meaningful information on the site and site activities while providing technical and government staff with information on the public's concerns and perceptions. By identifying public concerns and values, response actions can be designed to more effectively address the community's concerns and needs.
- **Provide opportunities for meaningful public input to technical and risk management decisions at the site.** This plan and the ongoing community relations activities will encourage and enable the public to provide input on site decisions that may potentially affect their community.
- **Create mechanisms to identify and resolve conflict regarding site activities and decisions on response actions.** While conflicts may arise during the course of site investigation and remediation activities, this community relations effort will help facilitate conflict resolution.

1.2 OVERVIEW

The activities presented in this plan will be implemented for the *Remedial Investigation/Feasibility Studies (RI/FS)* at the JPL Superfund site in Pasadena, California. The RI/FS are investigative and analytical studies intended to gather data, establish criteria for clean up, identify clean up alternatives, and analyze in detail the technology and costs of the alternatives. The CRP is consistent with federal and state guidance for implementing community relations efforts and will be updated as needed throughout the Superfund process. These processes will be collectively referred to as the *remediation* process throughout the remainder of the CRP.

This plan has been prepared by the National Aeronautics and Space Administration (NASA). When a federal facility is listed as a Superfund site, the responsible party is the federal agency responsible for the facility. The federal agency usually assumes the role of the "lead agency," responsible for appropriate response action. As the current owner of the facility, NASA

is assuming the role of lead federal agency at JPL and is responsible for overall management of the remediation process including direction of the implementation of the community relations activities at JPL.

This CRP will be reviewed and will require approval by U.S. Environmental Protection Agency (USEPA) Region IX, the California State Department of Toxic Substances Control (DTSC), and the California Regional Water Quality Control Board (RWQCB). The community relations activities will be conducted in cooperation and close coordination with these agencies as described in the Federal Facility Agreement (FFA) (See Section 2.4). USEPA will oversee all community relations activities implemented at JPL.

The JPL facility is operated for NASA by the California Institute of Technology (CalTech). NASA designated JPL as interim Project Manager for the Superfund site, but will oversee all Superfund activities. NASA will designate a Project Manager at JPL to oversee all Superfund activities.

NASA has designated a special fund source for meeting its responsibilities for compliance and remediation activities. The funds are contained in the Agency's Environmental Compliance and Restoration account, and are set aside for environmental activities within the Construction of Facilities budget line item. These funds can only be used for compliance and remediation activities and may not be diverted for any other use. The activities in this account which have the highest priority for funding are those for which there is a signed FFA or consent order. NASA is committed to the protection of human health and the environment and to meet its remediation obligations at contaminated sites.

This plan is based on information obtained from interviews and meetings with representatives from JPL and NASA; and individuals from Altadena, La Cañada-Flintridge and Pasadena including: neighborhood residents; businesses; community action groups; federal, state and local officials; and other interested parties. Other sources of information for this document included a review of media coverage, studies previously conducted by Ebasco Services, Inc., literature from Altadena, Pasadena and La Cañada-Flintridge's Chambers of Commerce, and the 1990 U.S. Census.

In general, community concern about the site appears low. The majority of the community interviews indicated that few in the nearby communities are aware of the site's status as a Superfund site, despite the information supplied to the community and many media reports. Concern may increase as more information flows through a variety of channels in an attempt to reach a wider and more diverse audience. An effective CRP for this site should prepare for an increased level of community interest and educate residents so that they can better understand the Superfund remedial process, make informed recommendations and provide input into the process.

The CRP is divided into the following sections:

- 2.0 SITE DESCRIPTION
- 3.0 COMMUNITY BACKGROUND
- 4.0 HIGHLIGHTS OF THE COMMUNITY RELATIONS PROGRAM
- 5.0 PUBLIC MEETINGS, PRESS RELEASES
- 6.0 TECHNIQUES AND TIMING
- 7.0 CONTENTS OF ADMINISTRATIVE RECORD
- 8.0 TECHNICAL ASSISTANCE GRANT PROGRAM
- 9.0 APPENDICES
 - A LIST OF KEY CONTACTS AND INTERESTED PARTIES
 - 1. NATIONAL AERONAUTICS AND SPACE ADMINISTRATION CONTACTS
 - 2. NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DESIGNATED CONTRACTOR REPRESENTATIVES
 - 3. STATE OFFICIALS
 - 4. U.S. EPA REGION IX REPRESENTATIVES
 - 5. FEDERAL ELECTED OFFICIALS
 - 6. STATE ELECTED OFFICIALS
 - 7. COUNTY OFFICIALS
 - 8. MAYORS AND LOCAL OFFICIALS OF SURROUNDING COMMUNITIES
 - 9. OTHER FEDERAL AGENCY REPRESENTATIVES
 - 10. AREA CHAMBERS OF COMMERCE
 - 11. MEDIA REPRESENTATIVES
 - B ACRONYMS AND ABBREVIATIONS
 - C GLOSSARY
 - D EXAMPLE OF JPL MAILING CARD
 - E INFORMATION REPOSITORIES
 - F PROPOSED LOCATIONS FOR PUBLIC MEETING PLACES
 - G LIST OF 1993 INTERVIEW QUESTIONS

Appendices to this document include a list of key contacts and interested parties, a list of acronyms and abbreviations, a glossary of technical terms used in this document, an example of a mailing card, a summary of the locations of the site's information repositories, a summary of proposed locations for public meetings regarding the site, and a list of interview questions.

1.3 DESCRIPTION OF USEPA'S SUPERFUND PROCESS

In 1980, Congress enacted the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)*, more commonly known as "Superfund." CERCLA established a comprehensive program to identify abandoned and/or uncontrolled hazardous waste sites, ensure that they are cleaned up, evaluate damages to natural resources, and pursue potentially responsible parties. Modifications to CERCLA were enacted on October 17, 1986 through the *Superfund Amendments and Reauthorization Act of 1986, or SARA*. All amendments to CERCLA are formally part of the statute and will hereafter

be referred to as CERCLA. Section 300.430(e) of the *National Oil and Hazardous Substances Pollution Contingency Plan, or NCP*, 40 CFR Part 300 serves as the implementing regulation for CERCLA, and was most recently amended on March 8, 1990.

This section describes each of the major steps taken during the Superfund process to investigate and remediate hazardous waste sites.

Step 1: Site Discovery

Potential Superfund sites are typically brought to USEPA's attention through state and county inspections and reports from concerned citizens. Federal facilities, such as JPL, were required to conduct investigations of past waste management activities, in response to SARA Section 120(d) (Federal Facilities).

Step 2: Preliminary Assessment and Site Investigation

The first step in the Superfund process for a federal facility are two initial studies known as the *Preliminary Assessment (PA)* and *Site Investigation (SI)*. Both studies are the process of collecting and reviewing available information about a known or suspected hazardous waste site or release. These studies are conducted in order to determine the severity of the contamination problem posed by the site. At the conclusion of the site investigation, the site is then scored by USEPA using a system called the *Hazard Ranking System (HRS)*. The Hazard Ranking System is a scoring system used to evaluate potential relative risks to public health and the environment from release or threatened release of hazardous substances. Sometimes an *Expanded Site Investigation (ESI)* is also needed. The Expanded Site Investigation collects additional data through field work to provide more detailed information to use in the Hazard Ranking System.

Step 3: National Priority List

If a site's problems are determined to be potentially serious enough, based on its HRS score, the site will be nominated for placement on USEPA's *National Priority List (NPL)*. The NPL is a national roster of USEPA's top-priority hazardous waste sites that are eligible for investigation and remediation under the federal Superfund program. Typically, sites must receive a score of at least 28.5 out of 100 to be included on the NPL.

Step 4: Remedial Investigation and Feasibility Study

Following NPL placement, two related studies, a *Remedial Investigation (RI)* and a *Feasibility Study (FS)* are planned and conducted. An RI/FS may take between one and two years. In addition, a *Community Relations Plan* is written at the onset of the RI to ensure the public is informed and involved while the studies are taking place, and throughout the remainder of the remediation.

During the RI/FS phases of work, comprehensive sampling programs are often designed and conducted in order to gather and evaluate data about site contaminants. The purpose of the RI is to identify the nature and extent of contamination both on- and off-site. In conjunction with the RI, a study known as a *Risk Assessment* is conducted. The Risk Assessment is a study which identifies and evaluates the risks that site contamination may pose to public health, welfare and the environment. The risk assessment evaluates present and future risks in the absence of any remediation and helps determine the need for and extent of remediation requirements. The FS identifies and evaluates various alternatives for cleaning up site contamination on the basis of technical feasibility, public health effects and environmental impacts, impacts to the community, institutional concerns, conformance with other applicable relevant and/or appropriate environmental laws, and costs.

Upon completion of the FS, USEPA publishes a *Proposed Plan* that summarizes alternatives evaluated in the FS and contains a description of the preferred clean up strategy proposed by NASA with concurrence from the regulatory agencies to remediate the site. The FS and Proposed Plan are then submitted for public comment for a 30-day period (which may be extended an additional 30 days upon timely receipt of a request from a member of the affected public). As lead agency, NASA will issue the Proposed Plan for the JPL site. USEPA will maintain final approval authority for any Proposed Plan.

Step 5: Record of Decision

At the conclusion of the public comment period and following consideration of all state and community comments, NASA with USEPA's approval will make its final remedy selection. This final remedy selection is issued in a *Record of Decision (ROD)*, a legal, public document that sets forth and explains the remediation alternatives to be used at a Superfund site. The ROD also includes a response to public comments, called a *Responsiveness Summary*. The ROD and the

Responsiveness Summary will be available for public review in the information repositories.

Step 6: Remedial Design and Remedial Action

Following selection of the remedy, the *Remedial Design (RD)* phase of work is initiated. The Remedial Design is an engineering phase when technical drawings and specifications are developed for subsequent remedial action. During this phase of Superfund work, all the specific engineering aspects of the remedy are designed. If county ordinances, deed restrictions, or other *institutional controls* are a part of the remedy, such measures would be drafted during the RD phase for submittal to the appropriate legal authorities or governments for their review, approval, and implementation. Designing the long-term action, if it is indicated by the FS, may take many months.

At the conclusion of the design phase, the *Remedial Action (RA)*, or the actual construction and implementation of the selected clean up alternative, is initiated and the final remedy is put into place. The final long-term remedial action typically takes one to two years to construct, although treatment of contaminated ground water, if needed, may take decades. Where necessary, at the conclusion of the remedial action, monitoring of the remedy may continue for many decades to ensure that the remedy remains effective. Typically, Superfund sites undergo a five-year review to evaluate the effectiveness of the remedy and to ensure that the site poses no threat to public health and the environment.

At any time during the Superfund process, if the site poses an immediate threat to public health or the environment, USEPA has the authority to intervene with an emergency *Removal Action*. A Removal Action is an immediate (short-term) action, such as the implementation of a temporary alternative water supply, that is taken to safeguard public health or the environment.

In order to expedite the Superfund process at large or complex sites, a site is frequently subdivided into *Operable Units (OUs)* or separate study areas. An Operable Unit may be established based on a particular type of contamination or medium (soil, water or a specific chemical compound) and/or a specific geographical portion of the overall site area.

2.0 SITE DESCRIPTION

2.1 SITE LOCATION

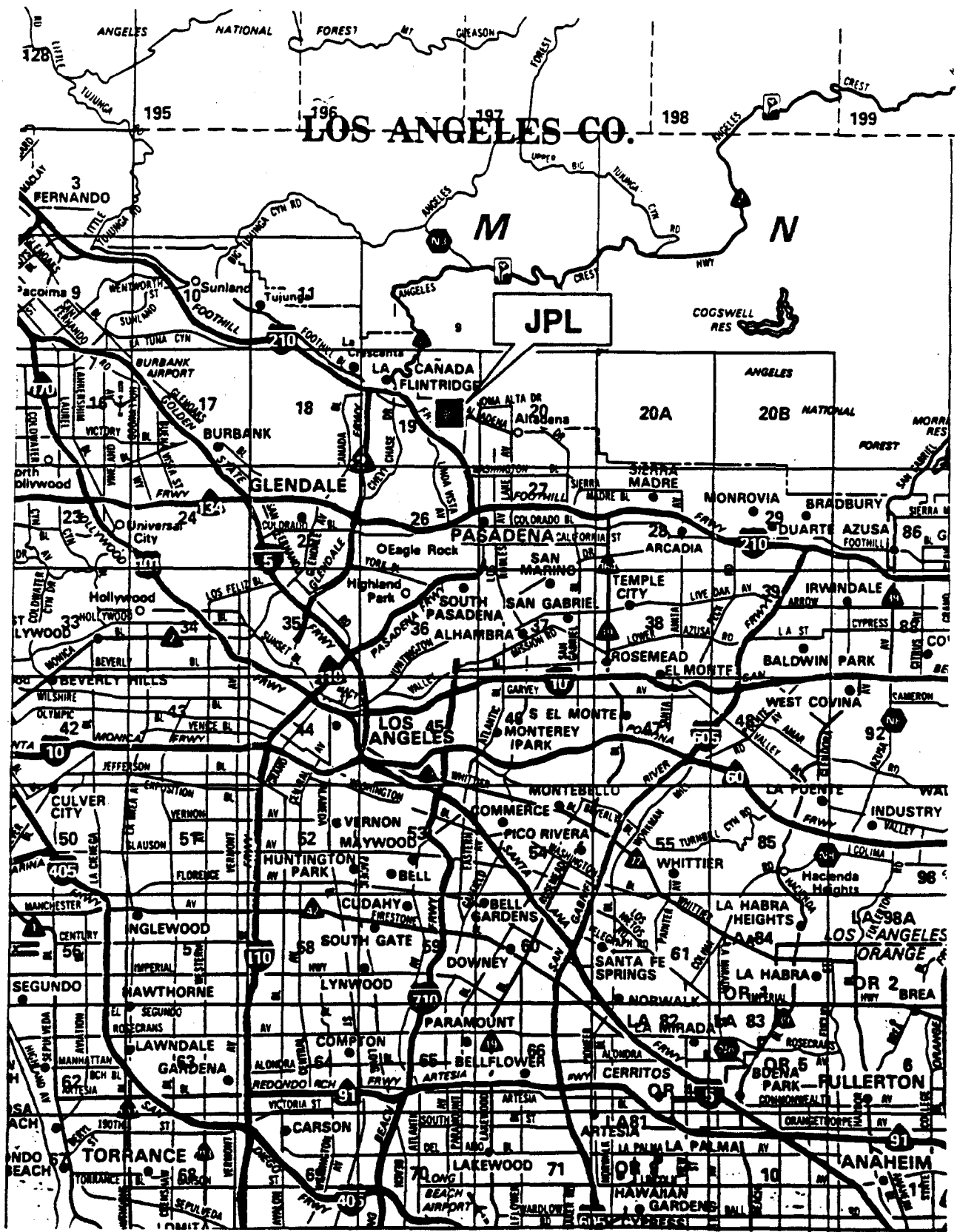
The JPL Superfund site is currently comprised of 176 acres of land within the cities of Pasadena and La Cañada-Flintridge, California. Located at 4800 Oak Grove Drive, JPL is on a south facing slope of a foothill ridge of the San Gabriel Mountains. JPL is bordered on the west by a residential neighborhood, on the north by the Angeles National Forest, and on the south by an equestrian club and a Los Angeles County Fire Station. The eastern border of JPL is next to the Arroyo Seco, a typically dry riverbed. Residential areas of the three nearby communities - Pasadena, Altadena, and La Cañada-Flintridge - are within one to three miles of JPL. Figure 1 shows the location of JPL in relation to nearby communities and surrounding geographical landmarks. The total population residing in the vicinity of JPL is as follows:

- within one mile of the site - 9,500;
- within two miles of the site - 17,000;
- within three miles of the site - 20,000.

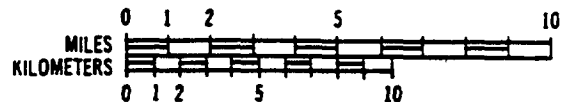
The primary land use in the area surrounding JPL is residential and light commercial. Industrial areas, such as manufacturing, processing and packaging, are limited. The closest residential properties are those located along the west fenceline of JPL property. The nearest offsite buildings are the Flintridge Riding Club and Fire Camp #2, both approximately 100 yards from the JPL southern border. The total number of buildings within two miles of the facility is approximately 2,500, primarily residential and community (schools, daycare centers, churches, etc.) in nature. Within 1/4 mile to JPL are located: the Child Education Center, United Methodist Church, Flintridge Preparatory School, La Cañada High School, St. Francis High School, Oak Grove Park (Los Angeles County), La Cañada Presbyterian Church and Daycare, and St. Bede's Catholic Church. The nearest roads to JPL are residential: Viro Road, Moonlight Avenue, Oak Grove Boulevard, Arroyo Boulevard and Starlight Crest. Freeway 210 is 1/2 mile from the JPL facility.

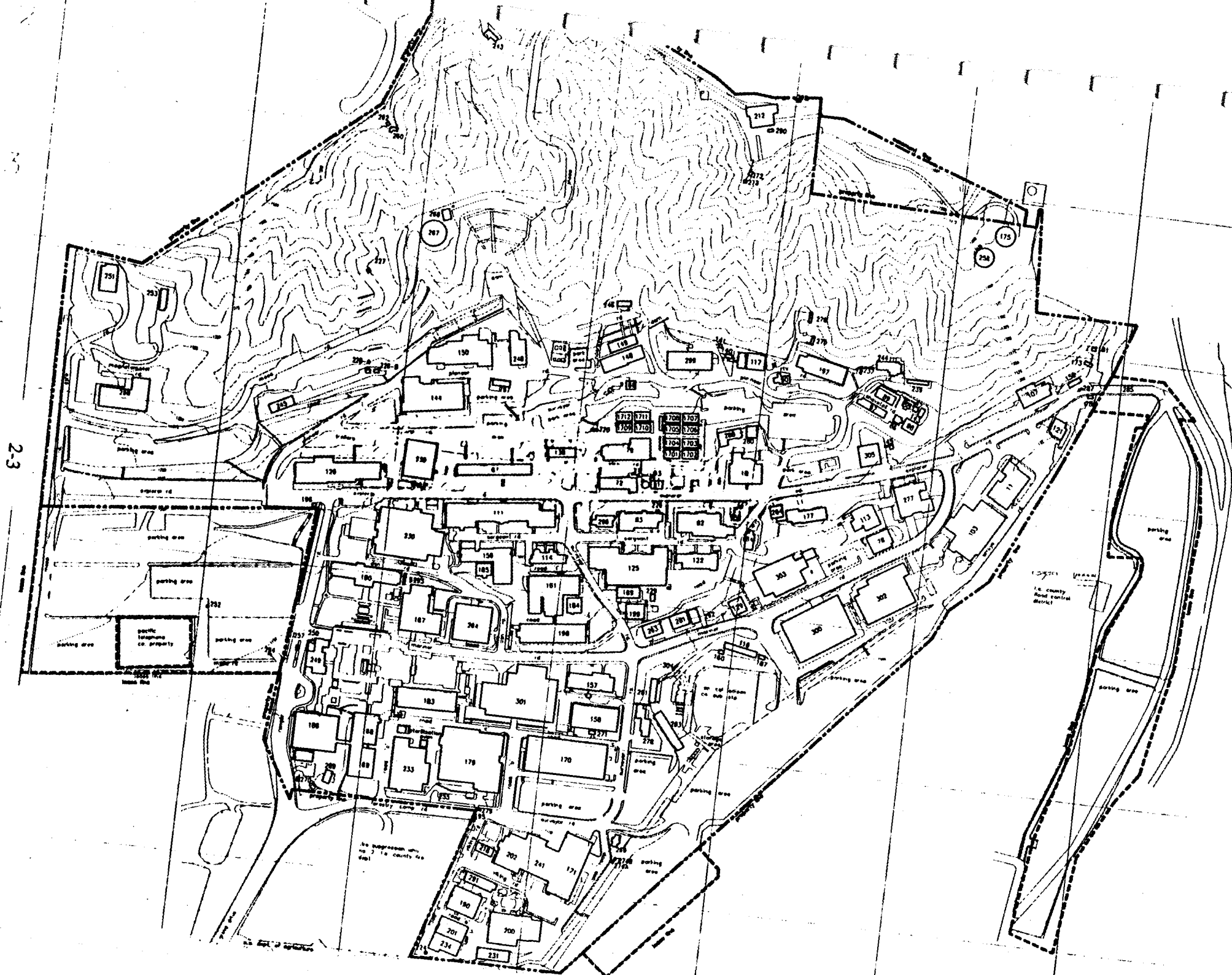
Because the facility is a federal property and JPL activities are of a highly technical nature, the perimeter is surrounded by an 8-foot high chain link fence (except by the main west entrance gate where a portion of the fence is wrought iron) with motion detectors. The border is checked periodically for maintenance. Access is controlled through three entrance gates, two are closed at night and the third is staffed 24 hours a day. Presently, the JPL facility employs approximately 6,600, supplemented by an additional 2,300 contractors. The facility contains a total of 114 buildings and structures. Figure 2 shows the locations of buildings and the road system currently at JPL. Numerous building changes have taken place during JPL's existence, with buildings torn

Figure 1 - Location of JPL to Nearby Communities



Source: Thomas Bros. Maps of Los Angeles, Orange, and San Diego Counties, 1968





down and replaced or two buildings merged into one. JPL's borders have also changed, always expanding over time.

In addition to the JPL site, two other unrelated Superfund sites are also located nearby. These Superfund sites include: the San Gabriel Valley site (7 miles to the east of JPL) and the San Fernando Valley site (5 miles to the west of JPL).

2.2 JPL HISTORY

JPL began in 1936 when Professor Theodore von Karmen of the California Institute of Technology (CalTech) and a group of students began testing liquid propellant rockets in the Arroyo Seco. At that time, the work was being completed through CalTech's Guggenheim Aeronautical Laboratory. In 1940, the Army Air Corps provided funding and the first permanent structures were built near the present day site. By 1944, the site continued to grow and changed its name to the Jet Propulsion Laboratory, Guggenheim Aeronautical Laboratory. Ultimately, the site became known as the Jet Propulsion Laboratory or JPL, and became a fully owned federal facility. The Army maintained a contract with JPL until 1958, when the National Aeronautics and Space Administration (NASA) took over control. Today, under a prime contract, CalTech performs research and development tasks at facilities provided by NASA and which are located at the current day site of JPL. CalTech also maintains the facilities as part of its contractual agreement with NASA.

2.3 SITE FEATURES

JPL is situated in an *alluvial* (soil washed down from high ground by the action of water currents) fan at the base of the San Gabriel Mountains (Figure 3). In terms of groundwater *aquifers*, or underground rock formations that supply groundwater to wells and springs, JPL is located in the Monk Hill Sub-Basin which is located within the Raymond Basin (Figure 4). The Raymond Basin, bounded on the north by the San Gabriel Mountains, west by the San Rafael Hills and south by Raymond Fault, provides an important source of potable groundwater for many communities in the area including Pasadena, La Cañada-Flintridge, San Marino, Sierra Madre, Altadena, Alhambra and Arcadia. For example, Raymond Basin provides the City of Pasadena with about 40% of their water.

The Raymond Basin's climate is subtropical to semi-arid, characterized by hot, dry summers and mild winters with intermittent rain. The long-term average annual precipitation in the area is 22.5 inches with approximately three-quarters occurring during the months of December through March. Groundwater levels usually fluctuate during the year with lower elevations between July and December, and higher elevations between January and June.

Figure 3 - Site Features

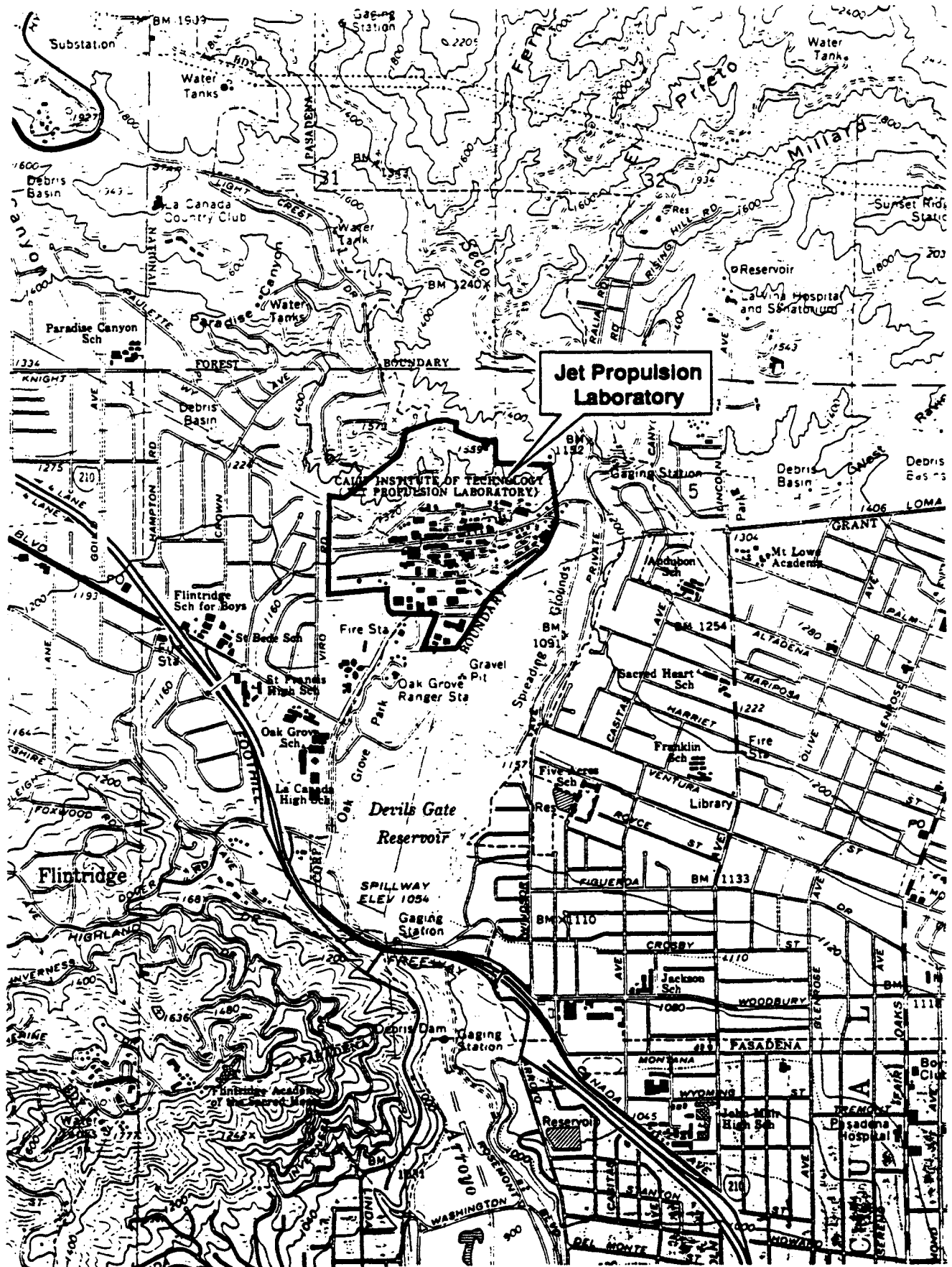
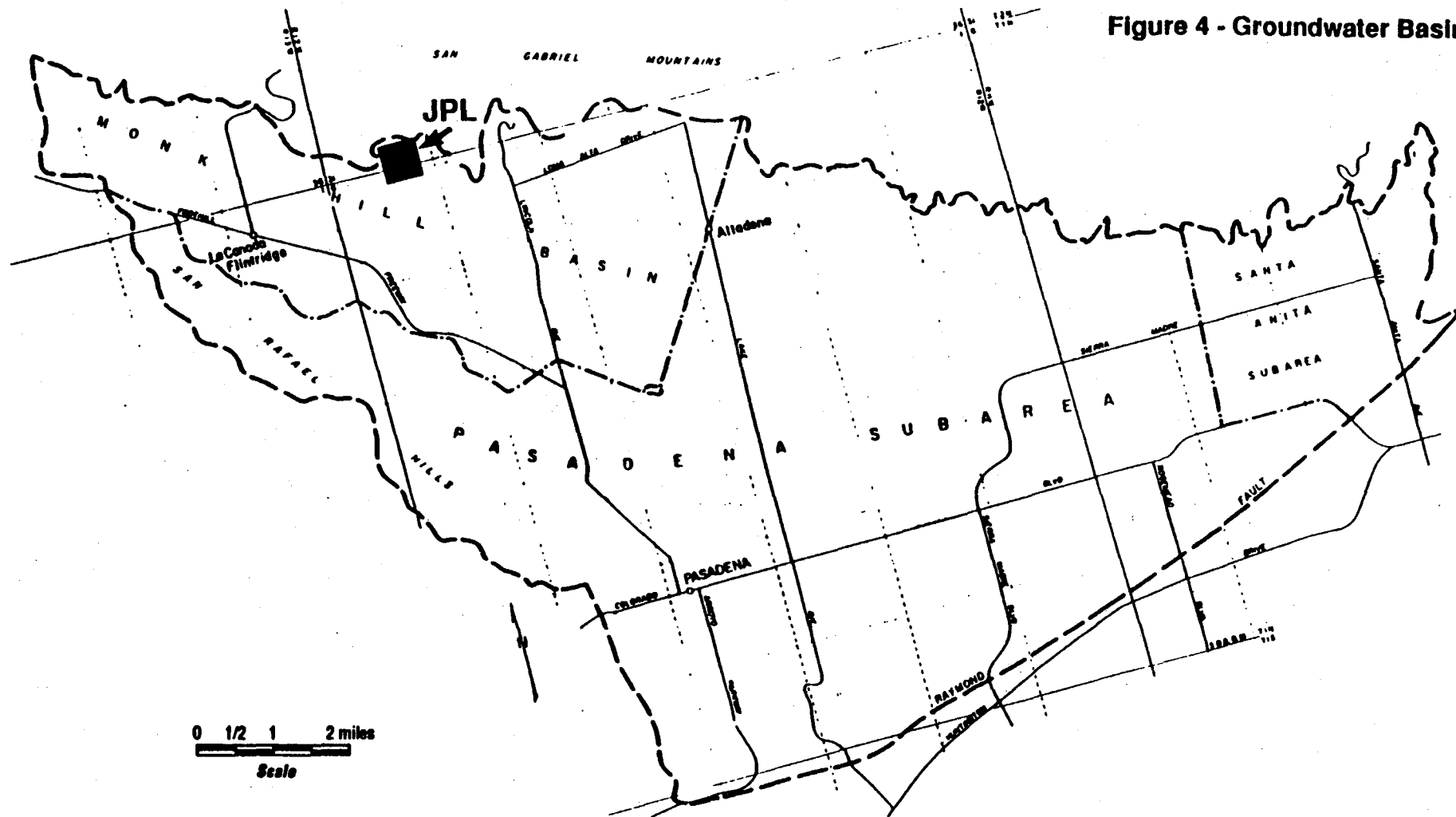


Figure 4 - Groundwater Basins



--- Limit of Raymond Basin

The groundwater table below JPL has been encountered in monitoring wells at depths from 100 to 240 feet below ground level. The groundwater table tends to conform to the surface topography with the predominant groundwater movement to the south and southeast from the foothills toward the Arroyo Seco Valley.

The City of Pasadena has four water supply wells and one monitoring well located in the Arroyo Seco *downgradient*, or in the direction in which the groundwater is flowing, from JPL (2,000 feet), drawing water from the Raymond Basin.

Thrust faults located near JPL include the Mount Lukens Thrust Fault, the south branch of the San Gabriel Thrust Fault, and the JPL Thrust Fault. These faults, along with others on the southern edge of the San Gabriel Mountains, comprise the Sierra Madre Fault system. The amount of influence, if any, faults on and near JPL have on the movement of groundwater is not currently known.

Spreading basins, intended for groundwater recharge, are located along the Arroyo Seco's eastern border. No lakes, ponds or wetlands exist near the JPL facility. An intermittent stream, the Arroyo Seco, flows to the southeast near JPL. Constructed primarily for flood control, the Devil's Gate Reservoir is located 1 mile south of JPL and may contain water, depending on time of year and amount of rainfall.

Native vegetation is chaparral or mountain brush consisting of scrub oak, manzanita and ceanothus. Native trees are oak and sycamore. The growing season for native vegetation is in winter because of the long arid summers and short mild winters with considerable moisture.

2.4 ENVIRONMENTAL INVESTIGATION HISTORY

2.4.1 Chronology

The City of Pasadena routinely collects water samples from their public water supply/drinking water wells. In 1980, the City of Pasadena discovered that municipal wells within 2,000 feet of JPL were contaminated with traces of *volatile organic compounds (VOCs)*, or organic compounds that evaporate readily at room temperature. VOCs found in the City of Pasadena's municipal wells included: trichloroethene, carbon tetrachloride, tetrachloroethene and 1,2-dichloroethene. The public water supply/drinking water wells were closely monitored and when the levels of VOCs rose above the State drinking water standards (more stringent than the federal drinking water standards), two of the City's public water supply/drinking water wells were closed in 1985. Two additional City public water supply/drinking water wells were closed in 1989, again due to levels of VOCs above State drinking water standards. At the same time period, two of Lincoln Avenue Water Company's public water supply/drinking water wells were closed in 1987, due to contamination. The Lincoln Avenue Water Company wells primarily serve the

community of Altadena. These wells draw water from the Raymond Basin, but further *upgradient*, or opposite from the direction in which groundwater is flowing, than the City of Pasadena's wells. Closure of all contaminated public water supply/drinking water wells ensured that customers were protected from unsafe exposures to VOCs. To accommodate well closures, the water utility companies had to supplement their water supply with imported water.

Several preliminary investigations were conducted in order to assess the hydrologic conditions in the Arroyo Seco and explore treatment alternatives. Contaminant concentrations were confirmed but the source of contaminants was not conclusively proven.

A Preliminary Assessment (PA) and a Site Investigation (SI) were conducted by Ebasco Services, Inc. at JPL in 1988. Ebasco Services, Inc. is an environmental consulting firm consulting on all aspects of site investigation and remediation. Ebasco has been contracted by JPL since 1987 to perform site and studies investigations. For the PA/SI, Ebasco reviewed available data, conducted interviews with JPL employees and retirees, and reported on previous waste handling and disposal practices including abandoned waste seepage pits, and past chemical spills.

The PA/SI report identified old waste disposal sites as potential sources for soil or water contamination on and adjacent to JPL property. The pits ranged from 15-30 feet wide and 15-30 feet deep, and were used between 1945 and 1960 for disposal of municipal wastes, and solid and liquid hazardous wastes. All potential sources for contamination required more investigation to conclude the definite presence of chemicals. The PA/SI also described contamination of water wells approximately 1,000 feet downgradient of the JPL site.

Early 1990, an Expanded Site Inspection was conducted by Ebasco Services, Inc. at JPL to provide additional data for site scoring using the Hazard Ranking System. As described in Section 1.3, the Hazard Ranking System is used to rank sites for potential listing on the National Priority List (NPL). Groundwater monitoring wells were installed and soil gas collectors were used as initial strategies to outline the nature and extent of groundwater and soil gas contamination. Data indicated that groundwater at JPL was contaminated with VOCs including carbon tetrachloride, trichloroethene and tetrachloroethene at concentrations above State and federal drinking water standards. The Expanded Site Investigation report was supplemented in late 1990 by Ebasco Services, Inc. with additional information on waste characteristics, migration pathways of water and air, and exposure pathways. This Supplemental Information to the Expanded Site Investigation was needed to provide information to USEPA for the newly revised Hazard Ranking System. USEPA's revisions to the Hazard Ranking System, in 1990, increased the amount and detail required to evaluate potential threats to public health and the environment from waste sites.

As a result of the Site Investigation and Expanded Site Investigation performed by Ebasco, additional seepage pits were identified. A total of thirty-seven (37) seepage pits have been identified as of May 1993. These pits are located throughout JPL, but are concentrated at the

northeast section where the older buildings were located. It appears that approximately one-quarter to one-third of the identified pits may currently be covered by buildings. The remaining identified pits appear to be currently covered by roads, parking lots, flower beds, etc. Detailed information regarding these pits may be found in the Remedial Investigation/Feasibility Study Work Plan.

Based on historical operations and sampling activities conducted during the Site Investigation and Expanded Site Investigation, the following chemicals have been identified in the Federal Facility Agreement and may be present in the environment at the site in excess of State and federal drinking water standards. The list includes chemicals known at this time to be present in the soil, subsurface soil and/or groundwater. As the remedial investigation continues, the list may change.

Organic chemicals	Inorganic chemicals	Metals
Benzene	Cyanide	Antimony
Bromodichloromethane	Nitrate (as Nitrogen)	Arsenic
Carbon Tetrachloride	Nitrate (as NO ₂)	Barium
Chlorobenzene		Beryllium
Dichlorobromomethane		Cadmium
1,2-Dichloroethane		Chromium
		(Total)
1,1-Dichloroethane		Cobalt
1,1-Dichloroethene		Copper
cis-1,2-Dichloroethene		Lead
Ethylbenzene		Molybdenum
Styrene		Mercury
1,1,1-Trichloroethane		Nickel
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)		Zinc
Tetrachloroethene (PCE)		Stontium
Trichloroethene (TCE)		Vanadium
Trichlorofluoromethane (Freon 11)		
Toluene		
Total Trihalomethanes (includes chloroform, bromoform, dibromochloromethane, and dichlorobromomethane)		
Xylenes		

2.4.2 Actions Taken

In 1990, approximately 160 cubic yards of soil and sludge were removed and disposed of. A storm drain chamber in the northeast section of JPL contained the sludge. In February, 1990, NASA provided funding for the construction and initial operation and maintenance of a temporary water treatment plant leased from Calgon by the City of Pasadena. Construction of this facility was completed in September 1990 and the City of Pasadena subsequently reopened its four closed public water supply /drinking water wells. The Lincoln Avenue Water Company built a water treatment facility in 1992 and has since reopened its two public water supply/drinking water wells.

2.4.3 Ongoing Actions

Ebasco Services, Inc. has been contracted to prepare a workplan for the RI/FS for submittal to the following regulatory agencies: USEPA, DTSC and RWQCB. Since there are three operable units (see Section 2.4.5), there will be three RI/FS reports that will be generated to address the contamination. In addition, one overall document to combine and summarize the three RI/FS reports will be prepared. The Remedial Investigation portion will investigate site characteristics and determine the nature and extent of contamination on-site and off-site. In addition, the Remedial Investigation will assess risks to public health and the environment. The Feasibility Study portion will identify and evaluate all potential remedial alternatives to mitigate and reduce these risks.

2.4.4 Federal Facility Agreement

JPL was formally placed on the USEPA's National Priorities List (NPL) on October 23, 1992, the first NASA-owned facility designated as a Superfund site.

As a result of JPL being listed on the NPL, NASA entered into negotiations for a Federal Facility Agreement with the USEPA Region IX, and the State of California (California State Department of Toxic Substances Control and the California Regional Water Quality Control Board, Los Angeles Region). The purposes of this Agreement are to:

- 1) Establish roles and responsibilities of the various federal and state agencies;
- 2) Identify Operable Units appropriate to the site prior to the implementation of final remedial action(s);
- 3) Establish requirements for the performance of the RI/FS;
- 4) Identify the nature, objective, and schedule of all activities to be taken at the site;
- 5) Ensure that selected remedial actions are implemented in accordance with CERCLA and applicable State law, and assure compliance with other Federal and State laws and regulations.

The Federal Facility Agreement was signed on December 23, 1992. A 45-day public review period was conducted subsequent to the signing. Three announcements concerning the public comment period were published in the Los Angeles Times, the Pasadena Star News, and the San Gabriel Valley Tribune. The announcements were:

- January 8, 1993: Announcement of the signing of a Federal Facility Agreement and opportunity for public comment,
- February 8, 1993: Announcement of the project schedule and opportunity for public comment, and

- February 14, 1993: Announcement of the project schedule public comment period correction.

There were no public comments received on the Agreement during the public comment periods.

2.4.5 Operable Units

The JPL Superfund site has been divided into three Operable Units to expedite the Superfund process. JPL's eastern border - the Arroyo spreading grounds and City of Pasadena production wells - will be used to separate on-site and off-site investigations (see Figure 5). The rationale for this separation is that information is needed regarding on-site groundwater transport so that off-site transport can be fully understood.

The following provides a brief description of the Operable Units (Also see Table 1): (Note that the *RI/FS Workplan*, 1993, discusses in detail the history, area characteristics, nature and extent of contamination, and proposed action of these units).

OU #1 - Operable Unit #1 addresses all groundwater contamination located west of the eastern edge of the Arroyo Seco.

OU #2 - Operable Unit #2 addresses all sources of soil contamination located on-site, within JPL borders. There are 37 potential sources of soil contamination, identified as past waste disposal sites in the *RI/FS Workplan*, 1993.

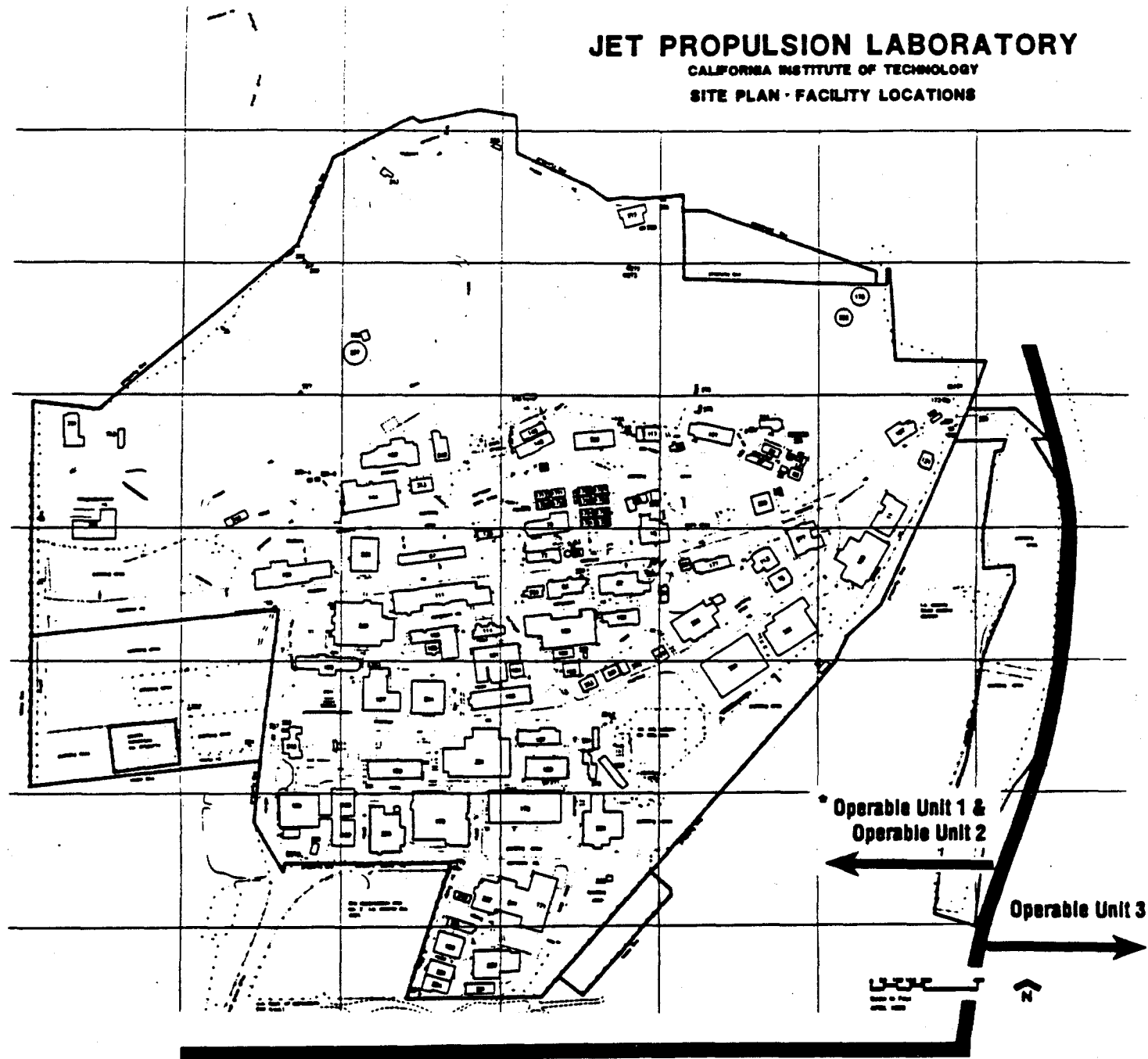
OU #3 - Operable Unit #3 addresses all groundwater contamination located east of the eastern edge of the Arroyo Seco. The easternmost edge of the Operable Unit will be determined through studies conducted during the RI.

Table 1 Operable Units for JPL Superfund Site

OU	Description	Location	Potential Contaminants
OU #1	On-site groundwater contamination	Eastern edge of the Arroyo Seco to western boundary of JPL site	VOCs, metals
OU #2	On-site soil contamination	On JPL facility	VOCs, metals
OU #3	Off-site groundwater contamination	East of the eastern edge of the Arroyo Seco	VOCs, metals

Work plans for all operable units are in progress and have been submitted to the regulatory agencies - USEPA Region IX, the California State Department of Toxic Substances Control (DTSC), and the California Regional Water Quality Control Board (RWQCB) - for review. The overall cleanup project is estimated to take place beginning late 1995 or early 1996. Fieldwork on the first operable unit will commence in the fall of 1993.

Figure 5 - Operable Units



* Operable Units 1 and 2 Fall within the Same Geographic Area.
Operable Unit 1 includes the Groundwater in that Area. Operable
Unit 2 includes the Alluvium above the Groundwater Table in that Area.

3.0 COMMUNITY BACKGROUND

The purpose of this section of the CRP is to profile the communities surrounding the JPL facility and to discuss the concerns and issues these communities have regarding the site. The demographics of the three communities surrounding JPL are included in the Community Profile. Several groups were identified during the 1993 Community Interviews. These groups will be contacted to determine if environmental equity issues or concerns need to be included in this Community Relations Plan. NASA will make further efforts in the fall of 1993 to contact these groups for more in-depth community interviews regarding environmental equity concerns.

3.1 COMMUNITY PROFILE

3.1.1 History

The earliest known settlers of the area in which JPL is situated were the Gabrielino Indians, of the Shoshonean branch of the Uto-Aztekan linguistic stock. Spanish land exploration of California brought European settlers into the area, but it wasn't until after Mexican independence in 1822 that the lands in California were gradually granted to private landowners. California became the thirty-first state in 1850. Founded by Indiana settlers, Pasadena was officially incorporated in 1886. The area of La Cañada-Flintridge was subdivided by two Michigan partners in 1876. La Cañada-Flintridge remained unincorporated, albeit a community in spirit, until 1976. Altadena's settlement history is similar to those described above except that it has remained unincorporated.

The first settlers were agricultural, clearing chaparral to raise bees, oranges and other fruits. From the beginning, water was always a serious concern and its limited supply restricted economic growth until wells were drilled and, in 1955, imported water from the Colorado River was brought in to supplement supplies. Agriculture was displaced by residential use when taxes and water costs became prohibitive.

3.1.2 General Profile

Major sources of employment in the area are office, retail and service centers, primarily located within Pasadena. Approximately 30% of JPL employees come from Pasadena, 7% from Altadena and 6% from La Cañada-Flintridge. Residents of Altadena and La Cañada-Flintridge generally are employed outside their home community, except those conducting retail businesses or professional services for their respective communities.

Three major freeways serve the Pasadena, Altadena, and La Cañada-Flintridge communities. The Pasadena freeway (California 110) connects Pasadena to Los Angeles.

The Foothill Freeway (Interstate 210) links communities to the north and east of Pasadena. The Ventura Freeway (US Route 134) leads to Ventura County and beyond. The Burbank-Glendale-Pasadena airport and the Los Angeles International Airport service all three of the communities. The Burbank-Glendale-Pasadena airport is closer, 20 minutes from downtown Pasadena. Public bus transportation throughout Pasadena, Altadena and La Cañada-Flintridge is provided by Southern California Rapid Transit District, Greyhound and Trailways. The only railroad close to JPL is the Amtrak line, running through Pasadena.

Five hospitals service the Pasadena, Altadena and La Cañada-Flintridge communities. Four are located in Pasadena (2 major, 2 minor). The fifth hospital has a Glendale address but is closest to JPL, only 5 miles away. There are thirty-six (36) paramedic teams in Los Angeles County and thirty-two (32) rescue squads.

3.1.2.1 Pasadena

The population of Pasadena was 131,591 (1990) with a 9.7% growth of 13,041 since the 1980 Census. In 1990, the population was broken down into the following demographics: 61,325 White, 35,912 Hispanic, 23,391 African American, 10,171 Asian, 4,038 American Indian and 356 Other. The average income level was \$50,242 (household) and \$59,202 (family). The Pasadena Unified School District consists of: twenty-four (24) public school, five (5) special education schools, thirty-six (36) private and parochial schools, and nine (9) universities and colleges. Additional community services within Pasadena include forty-three (43) daycare centers and seventeen (17) nursing homes.

The City of Pasadena's government structure includes a Board of Directors, made up of seven (7) members elected for a 4-year term. The Board of Directors elects from its membership a Chair (also known as Mayor) who presides at its meetings. The Board appoints (and may remove) the City Manager who is responsible for overall administration of the City. Several City Departments have a role in environmental issues including: Departments of Public Health, Public Works and Transportation, Recreation, Water and Power, and Housing and Development.

3.1.2.2 Altadena

The population size of Altadena was 42,658 (1990) with a 3.9% growth of 1,671 since the 1980 Census. In 1990, the population was broken into the following demographics: 20,892 White, 16,551 African American, 6,019 Hispanic, 3,211 Other, 1,786 Asian and 218 American Indian. The average income level was \$44,072. Altadena is included in Pasadena's Unified School District and has twenty (20) public/private and three (3) special education

schools within the town borders. Additional community services within Altadena include ten (10) daycare centers.

Although unincorporated, there is an Altadena Town Council made up of seven (7) members with seven (7) alternates. Six of the eight current Town Committees may have a role in environmental issues - Land Use, Altadena Beautiful, Traffic/Roads, Water Services, Devil's Gate, and Parks/Recreation.

3.1.2.3 La Cañada-Flintridge

The population size of La Cañada-Flintridge is 19,578 (1990) with a 2.9% reduction of 575 since the 1980 Census. In 1990, the population was broken into the following demographics: 16,008 White, 2,367 Asian, 892 Hispanic, 79 African American, and 25 American Indian. The average income level is \$78,965. There are four (4) public schools, four (4) parochial schools and five (5) private schools in the Unified La Cañada School District. In terms of additional community services, La Cañada has seven (7) daycare centers and one (1) nursing home.

La Cañada-Flintridge's government consists of a City Council, with five (5) members elected on a rotating basis for a 4-year term. In addition, a City Manager has responsibility for the overall administration of the city. Four City Commissions exist, each of which may have a role in environmental issues - Planning, Law Enforcement, Public Works, and Parks and Recreation.

3.1.2.4 Los Angeles County

All three communities are in Los Angeles County. The County of Los Angeles' structure is headed by a County Supervisor and a Board of Supervisors. The Board has five (5) elected members. The County seat is in Los Angeles. Several county departments exist which may have a role in environmental issues, in particular the Public Health and Public Works Departments.

3.1.2.5 Workforce of JPL

The onsite community of JPL full time regular employees number 6,094 as of July 1993. This workforce is broken down into the following demographics: 4,556 White, 647 Asian, 474 Hispanic, 373 African American, and 44 American Indian. JPL also has 684 student employees (as of July 1993) whose demographics are broken down as follows: 396 White, 97 Asian, 97 Hispanic, 87 African American and 7 American Indian. The head count for contractor employees at JPL is 2,093 onsite (as of August 1993). These employees

represent approximately 42 contracting companies. Demographic information has not been collected for those contracting with JPL.

3.2 CHRONOLOGY OF JPL COMMUNITY OUTREACH

3.2.1 JPL General Public Awareness Activities

Being committed to providing information to the public on its activities, JPL has twenty (20) outreach programs and eight (8) academic employment programs for the local communities surrounding its facility. These programs are primarily educational in nature to disseminate information on JPL and NASA science and engineering programs. JPL conducts educational conferences and workshops in connection with JPL's flight missions, supports school science and career fairs, and science demonstrations at schools.

One specific outreach program is the Eliot Middle School Adopt-A-School Program. Eliot Middle School is in Altadena and was adopted by JPL in 1981. Students participate in field trips, lectures and demonstrations designed to generate an interest in science and engineering. JPL also operates the Teaching Resource Center at Clark Junior High School in La Crescenta (next to the community west of La Cañada-Flintridge). JPL cooperates with community schools in other ways as well, especially technically related, such as: Pasadena City Schools' Youth and Career Days, engineering lecture program on request, judging projects at Science Fairs, and the student-mentor program for La Cañada School District. The JPL summer employment program provides jobs for many students and instructors from local schools.

JPL features tours, exhibits, slide shows and lectures on aeronautics and space technology. The JPL Speakers Bureau gives lectures and audiovisual presentations by request to various public audiences. Topics include JPL flight projects like Voyager, Magellan, Galileo and Ulysses, and other Laboratory research and development activities.

JPL has hosted an Open House to the public for 30 years either on a monthly or annual basis. The intent is to inform citizens on JPL-related projects through exhibits, displays and tours. The Open Houses were formerly held monthly and drew 1,000 - 2,000 people each month. In 1991, the Open House was first held on an annual basis and drew 20,000 - 24,000 people for a 2-day event.

3.2.2 Previous Community Outreach Activities

Several community outreach activities have been initiated over the last two years dealing with environmental issues at JPL and concerning the Superfund site. Activities included:

Media:

In 1991, a press release reporting ongoing studies in anticipation of placement on the NPL was sent out to twelve (12) newspapers and wire services, eight (8) TV stations and two (2) radio stations. The Los Angeles Times, Los Angeles Daily News, Pasadena Star-News, La Cañada Valley Sun, Foothill Leader, KNBC-TV, and KFWB radio reported the information in the press releases. The Universe (a JPL internal newsletter) also carried the 1991 report. In addition, The Universe carried a story on the inclusion of the NPL in 1992.

Presentations:

Three presentations have been made about the JPL site, by request, to public officials: two to the Devil's Gate Dam Multiple Use Project (Hahamungna Park) and one to the Raymond Basin Management Board. If a presentation is desired (also see Section 6.3.1), residents should contact Kimberly Lievense, Acting Public Services Manager, at 818-354-0112 (also see Appendix A.2.).

JPL Mailing List:

Mailing cards were developed to hand out to individuals to solicit their interest in being kept informed on the status of the site's Superfund designation and remediation activities (see Appendix D). The cards primarily serve as an easy mechanism for someone to send in their name and address. Cards were distributed at community events such as Earth Day and the JPL Open House in 1991 and 1992, handed out to individuals to pass onto their groups, and used to gather names for the mailing list when individuals called in with questions regarding the site.

A mailing list of all residents within a 1/2-mile radius of the facility's border will be available for use by the end of September. All residents who are not currently on the mailing list will receive a letter early fall of 1993 notifying them that they have been put on the list and providing them with a copy of the most recent fact sheet.

Other efforts undertaken to add interested residents to the mailing list includes articles placed in specific newsletters: Lincoln Avenue Water Company Newsletter, LaCrescenta Newsletter (articles have appeared twice), and the Pasadena In-Focus. These articles have briefly explained the existence of the Superfund and asked for people to contact JPL, if interested, to be placed on the mailing list.

Fact Sheets:

In April 1991, a fact sheet was written to describe activities at JPL and the potential for placement on the NPL. This sheet (Fact Sheet #1) was informally reviewed by USEPA.

Of the 3,000 copies printed, approximately 2,000 have been distributed during the last two years through the mailing list, participants in the 1991 and 1993 community interviews, community activities such as Earth Day and the JPL Open House.

After JPL's inclusion on the NPL, a second fact sheet describing the status of the site was prepared in April 1993 (Fact Sheet #2). As of May 1993, copies of this fact sheet have been distributed to all JPL employees and contractors, participants in the 1993 community interviews, La Cañada City Hall, Pasadena Central Library, Altadena Public Library, and the La Cañada-Flintridge Public Library.

Phone calls:

A phone number for the public to call for information about the site on Fact Sheets #1 and #2, and the mailing cards has been provided. As of April 1993, fifteen (15) calls were received over the last 2 years.

Special Events:

JPL was invited to participate in Earth Day 1991 and 1992. Two staffed booths were set up to provide general information on JPL - one for display and a second for a video. In addition, Fact Sheet #1 and mailing cards were distributed and a staff person was available to answer questions regarding the site.

Community Interviews:

Anticipating JPL's listing on the NPL, community interviews were conducted in April-May 1991 to gather information on community concerns. One hundred-twenty-nine people were contacted via direct mail (to those on the mailing list and public officials) to solicit volunteers for the interviews. In addition, articles in several local newspapers solicited volunteers (La Cañada Valley Sun, 9/19/91; Pasadena Star-News, 10/21/91), as well as an internal JPL newsletter (The Universe). Eleven (11) participated in the community interview process. All those contacted for the interviews were placed on the mailing list for the Superfund site.

Community interviews were again conducted in April-May 1993 in order to gather additional information for the development of the CRP. The purpose was to determine community awareness of the JPL site and to identify interviewees' concerns and perceptions regarding the environmental investigation and site clean-up activities at JPL. One hundred-nineteen people were contacted for the interviews, via telephone or direct mail, and asked to participate. These individuals were identified based on a previous interest in the site (requesting to be on JPL's mailing list developed for the site) or because they participated in

the 1991 interviews. More information about the 1993 community interviews can be found in Section 3.2.3.

Information Repositories:

To provide the public access to technical information about the site, information repositories were established in October 1992 (see Appendix E for locations, contact persons, and hours). As of April 1993, these repositories contain Fact Sheets #1 and #2, technical reports and site information including the Preliminary Assessment, Site Investigation, Expanded Site Investigation, Supplemental Information to the Expanded Site Investigation, Draft RI/FS Workplan (1/91), Federal Facility Agreement, meeting minute packages and Project Schedule as of 5/93. The addition of meeting minute packages to the Information Repositories will take place upon agency approval of the minutes.

3.2.3 1993 Community Relations Program Activities

Community interviews were again conducted in April-May 1993 in order to gather additional information for the development of the CRP. The purpose was to determine community awareness of the JPL site and to identify interviewees' concerns and perceptions regarding the environmental investigation and site clean-up activities at JPL. One hundred-nineteen people were contacted for the interviews, via telephone or direct mail, and asked to participate. These individuals were identified based on a previous interest in the site (requesting to be on the mailing list developed for the site) or because they participated in the 1991 interviews.

In addition, a concerted effort was made to expand the diversity of individuals contacted. For example, target groups were identified (such as schools, churches, sheriff stations, real estate agents, daycare centers) and representatives were contacted directly by phone. Thirty-two interviewees (32) participated. All participants were provided with Fact Sheet #1 and #2.

During the interview, a list of twenty-two (22) questions were asked. The questions were designed to probe the interviewees' perception of JPL, the environment in the area, knowledge of the Superfund process, current sources of environmental information, types of concerns, information needs, and preferences for being kept informed and involved in the remediation process. Appendix G contains the list of questions. Additional feedback about past citizen concerns was gained through a review of comments in local newspapers. Taken together, the information gathered from the interviews with representatives of the three nearby communities and news coverage analyses were used to help develop recommendations and form the basis for the site-specific community relations activities

described in Sections 4.0 and 6.0. General trends of the responses and other comments and concerns of individuals are described below.

3.3 COMMUNITY CONCERNS

3.3.1 Summary of 1993 Interviews

Based on the 1993 interviews, the awareness level in the three surrounding communities regarding the JPL site remains relatively low. No significant difference in awareness existed between representatives of the three communities. Several comments were made during the interviews that the "word is not getting out" despite news coverage over the last several years. It was felt that the media sources which reported the story, were not used by a majority of the citizens. Interviewees felt that other mechanisms were needed to better inform the community. Community newsletters were stressed as a better channel of communication. Few interviewees remembered having read or heard anything about the environmental problems recently nor had talked with anyone else regarding the site. To date, manifestation of citizen concerns has been limited to requests for written information via the mailing cards (described above and in Section 6.0) or direct phone calls to JPL's Public Services Office.

In general, people expressed a relatively high level of concern with the general environment. Water quality and quantity, primarily groundwater, and air quality were the most mentioned issues. A wide diversity of additional environmental issues were brought up, many of which did not involve the Superfund site.

3.3.2 Summary of 1991 Interviews

The 1991 community interviews provided a comparison of current concerns with those expressed two years ago. No significant differences in concerns were expressed; instead, the results of the 1991 interviews supported the types of concerns expressed in 1993. Health was the primary concern expressed along with concern over environmental issues. There were many similar comments regarding the remediation process and the credibility of NASA and government agencies. Regarding remediation, 1991 interviewees echoed those in 1993 wondering what has been done, what will be done, the timeline, and technologies available. Trust and credibility concerns centered around current disposal practices, frustration over government bureaucracy and a perceived lack of action by USEPA at nearby Superfund sites. The results were also similar to 1993 in terms of level of awareness and knowledge about the site. Since the JPL site has been placed on the National Priorities List, it is a priority clean up site for NASA, the USEPA and the State of California.

4.0 HIGHLIGHTS OF THE COMMUNITY RELATIONS PLAN

The community relations activities for the JPL Superfund site have been designed based on the information gathered from the 1993 and 1991 community interviews and a review of news coverage for the last two years. Community relations activities are targeted to specific steps in the site investigation and remediation process for the entire project. The community relations program described in the CRP has been separated into two parts: 1) those activities required under CERCLA and 2) those activities that are recommended.

The premise in designing the activities outlined in this CRP was to establish a two-way dialogue with the surrounding communities and to ensure that the public be kept adequately informed. In addition, the activities were chosen based on the information needs and preferences, and types of involvement suggested by the interviewees, in order to design the CRP specific for the JPL site.

Finally, the activities are designed to provide opportunities for open, straightforward communications between NASA and the community. The community interviews pointed out the importance for NASA to build trust and credibility with the surrounding communities. NASA's community relations program needs to address these concerns by delivering information and creating opportunities to listen directly to community concerns.

Several different communication channels are proposed (see Section 6.0) since the interviews showed that reliance on media alone was not sufficient to inform and involve the public.

Evaluation will be an ongoing part of the community relations program to ensure its overall effectiveness. Evaluation mechanisms are discussed in Section 6.0.

5.0 PUBLIC MEETINGS, PRESS RELEASES

The Superfund process and Federal Facility Agreement requirements call for public meetings and press releases at specific points in the process. These requirements have been addressed in this CRP and are described in Section 6.0 and indicated on the schedule in Table 2 on page 6-20.

6.0 TECHNIQUES AND TIMING

This section presents the community relations techniques to be employed during the RI/FS process for the JPL site to make certain that the community is properly informed and included in the process. The section is organized in two primary ways. First, the activities required by CERCLA to inform and involve the public are discussed. Following the discussion of required activities is a discussion of what NASA is doing above and beyond the legal requirements, i.e., recommended activities. The recommended community relations activities are organized according to the objectives of the CRP (see Section 1.1 and 4.0) to which each technique best applies. The sections for recommended community relations activities are:

- ACTIVITIES TO BUILD AWARENESS
- ACTIVITIES TO INFORM AND EDUCATE
- ACTIVITIES TO INVOLVE THE COMMUNITY
- ACTIVITIES TO EVALUATE THE COMMUNITY RELATIONS

ACTIVITIES

6.1 COMMUNITY RELATIONS ACTIVITIES REQUIRED BY CERCLA

6.1.1 Information Repositories

Purpose

Information repositories are required for all Superfund sites placed on the National Priorities List. These serve as places where documents and information pertaining to the JPL site will be made available for public inspection and copying.

The information repositories will contain information on each Operable Unit. NASA will also maintain a list of materials that pertain to each Operable Unit. These lists will be a part of the repository. All of the following technical documents (which exist or will be developed) will be included.

- Preliminary Assessment/Site Inspection
- Expanded Site Inspection
- Community Relations Plan
- Investigation/Remedial Investigations Reports
- Feasibility Study Reports
- Proposed Plans
- Responsiveness Summary
- Record of Decision

- Fact Sheets
- News Releases
- Technical Assistance Grant Program applications and information (See Section 8.0)

In addition, any decision-making document that contains information discussing the basis of selection of the response action will also be included in the Information Repository, such as meeting minutes, or other correspondence or documents, etc.

Where

Information repositories were set up at the Pasadena Central Library, Altadena Public Library and La Cañada-Flintridge Public Library in October 1992. In addition, a fourth repository was set up at the JPL Library to provide information to employees and contractors. A list of the available documents (by Operable Unit) will be at each Repository to assist the public in determining the documents and site information that exists. All documents that require public review and comment periods will be available in the Repositories by the beginning of the public comment period.

6.1.2 Administrative Record

An *Administrative Record* is also required for every Superfund site. Similar to the Information Repositories, the Administrative Record also contains the primary technical documents. However, the purpose of the Administrative Record is to provide copies of the documents that are considered or relied upon the selection of the preferred remedial actions for each Operable Unit at JPL as well as documents that show public participation. All of the following technical documents (which exist or will be developed) will be included (Final Guidance on Administrative Records for Selecting CERCLA Response Actions (EPA Headquarters, Office of Solid Waste and Emergency Response, December 3, 1990, Appendix A)):

- Preliminary Assessment/Site Inspection
- Expanded Site Inspection
- Community Relations Plan
- Remedial Investigations Reports
- Feasibility Study Reports
- Proposed Plans
- Responsiveness Summary
- Record of Decision

In addition, those documents relating to community relations and public participation will be included such as:

- Public Comments and Responses to Comments
- Congressional Communications
- Responses to Comments from the State and Federal Agencies
- Responsiveness Summary
- Public Notices
- Transcripts of Formal Public Meetings
- Any Fact Sheet developed on the Proposed Plan
- Newspaper Articles Showing General Community Awareness
- Documents Sent to Persons on Community Relations Mailing List, Including Associated
Date and Mailing List for Each Document
- Technical Assistance Grants (see Section 8.0)

The Administrative Record has been established and is co-located with the Information Repository at the Pasadena Central Library, in accordance with relevant provisions in CERCLA, the NCP and USEPA guidance. NASA will maintain an index of the contents of the Administrative Record at each of the information repositories in the Pasadena Central, Altadena Public, and La Cañada-Flintridge Public Libraries. The index will be cross-referenced to the listing of documents in the Information Repository.

6.1.3 Public Notices

Purpose

The primary purposes of public notices are to provide an official announcement of activities and plans at JPL, and to encourage public involvement in the site remediation decision-making process.

Description

Public notices will be advertisements publicized as required by the Federal Facility Agreement. Notices will be placed in the Los Angeles Times, Pasadena Star-News and local newspapers identified in "News Releases." Although a one-way communication tool, notices are an efficient, simple means of alerting the public to important events. USEPA requires publication of public notices at key stages of the Superfund process under CERCLA, see "*When to Conduct*" below. Sensitivity about the need for a translation of public notices in another language will be addressed, see "Translations".

When to Conduct

A public notice **must** be provided:

- When the Administrative Record becomes available;
- When Technical Assistance Grants become available (see Section 8.0);
- When the engineering evaluation/cost analysis becomes available;
- When the RI/FS and Proposed Plan become available;
- When a public comment period is held on the RI/FS and Proposed Plan;
- When the response action has been selected and the Record of Decision signed;
- Whenever remedial action is taken or a settlement or consent decree entered into that differs significantly from the final remedial plan adopted by USEPA; and
- When the notice of intent to delete a site from the National Priorities List becomes available;

In addition, a public notice **will also** be used to announce:

- Emergency response actions;
- Public meetings.

6.1.4 Formal Public Comment Periods

Purpose

Public comment periods are a designated time period where comments from citizens are formally accepted by NASA. The purpose is to allow citizens an opportunity to comment for the public record on NASA's proposals. Public notices will announce the start of the comment periods, indicate where the documents are available for review, and list where comments should be submitted. Public comment periods, when designated, are required pursuant to the Federal Facility Agreement. NASA will accept public comment throughout the clean up process.

Description

Public comment periods allow citizens to comment for the public record on proposed site activities. A specific procedure for addressing public comments exists, pursuant to CERCLA and the Federal Facility Agreement and allows comments to be taken on specific documents which are: the Federal Facility Agreement, and the RI/FS Report and the Proposed Plan for each operable unit.

The public comment periods were held after completion of the draft Federal Facility Agreement. In addition, they will be held on the RI/FS and Proposed Plan for each operable unit. Comments may be submitted to JPL in writing or at a public meeting. Any comments or concerns received during the public comment periods or throughout the clean up process must be addressed in a Responsiveness Summary of the Record of Decision for that particular Operable Unit (see below).

When to Conduct

A minimum 30-day public comment period must be held when each Operable Unit's RI/FS and Proposed Plan have been released to the public. The comment period must be extended by at least 30 days upon timely request, defined as two weeks prior to the end of the comment period. The public comment period will be announced with a public notice according to the stipulations in the Federal Facility Agreement. The notice will be made in the Los Angeles Times and Pasadena Star-News.

6.1.5 Public Meetings

Purpose

These meetings or forums are events for large groups of citizens where experts are available to present information and answer questions. Citizens also ask questions and are offered an opportunity for formal comments and testimony on proposed actions. Intended to not only inform, the meeting will be structured to encourage discussion and receive citizen feedback on the proposed course of action.

Description

Public meetings allow the public to express concerns to the agencies involved in the remediation process. Although the meetings may not allow for individualized attention, many people can be reached at one time. Meetings also allow an opportunity to present information on a proposed course of action.

Fact sheets and other appropriate materials will be distributed at public meetings. Responsiveness Summaries, prepared with USEPA oversight, document and address oral or written citizen input submitted at public meetings and during public comment periods, as well as major issues and concerns raised during a response action. The Responsiveness Summary is a section of the Record of Decision (ROD) that addresses written or oral comments made by the public, not only on the Proposed Plan for selection of a remedy for the operable unit, but also for any other comments addressed to NASA during the RI/FS process (see Section 6.1.6). A transcript of any public meeting held during the public comment period

on the Proposed Plan and RI/FS report must be made available to the public in the Administrative Record and Information Repositories.

When to Conduct

NASA must convene a public meeting before adopting a plan for remedial action or Record of Decision. This meeting will take place during the public comment period on the RI/FS and Proposed Plan for each Operable Unit. In addition, NASA must convene a public meeting if, after adoption of the Record of Decision, an amendment to the Record of Decision is proposed. Finally, NASA will evaluate the need to hold public meetings when the remedial design has been completed or just before construction, based on attendance at past events, levels of concern and feedback of participants.

The meeting must be announced through public notice according to NCP guidelines and Federal Facility Agreement requirements. In addition, announcements will be made to those on the NASA mailing list.

Where

See Appendix F. for a list of proposed locations of public meetings places.

6.1.6 Responsiveness Summary

Purpose

The purpose of the Responsiveness Summary is for NASA to respond to public comments and concerns that have been expressed during the RI/FS process.

Description

The Responsiveness Summary is a section of the Record of Decision (ROD) that addresses written or oral comments made by the public, not only on the Proposed Plan for selection of a remedy for the operable unit, but also for any other comments addressed to NASA during the RI/FS process. Responsiveness Summaries document oral or written citizen input submitted at public meetings and during public comment periods, as well as major issues and concerns raised during a response action. NASA will prepare the Responsiveness Summary for the JPL site with USEPA and State of California oversight. The summary will also assist NASA in evaluating past community relations efforts and planning for subsequent activities during the remedial design and remedial action. The Responsiveness Summary is required by CERCLA as a component of the Record of Decision.

When to Conduct

USEPA policy requires the preparation of a Responsiveness Summary for any response action where a public comment period is required. The Responsiveness Summary will be issued with the Record of Decision for each remedial action and made available in the Information Repositories and Administrative Record.

6.2 ACTIVITIES TO BUILD AWARENESS

The first step to building a community relations program is to gain awareness and to activate interest in the community. Several techniques can be used both at the start of the community relations process and throughout the entire project. Site clean-up activities will occur over a number of years. It will be difficult but important to maintain awareness and interest for a long period of time. Techniques will include:

6.2.1 Exhibits

Purpose

The purpose of the exhibits is to increase community awareness of the Superfund site's existence and to illustrate the technical issues. Primarily a one-way communication tool, the exhibits will also encourage feedback and input from the public by providing a phone number to call with comments and questions.

Associated with each exhibit, as space allows, can be additional materials to draw attention and provide information.

When to Conduct

JPL held its annual Open House on June 26 and 27, 1993. The Open House is an opportunity for members of the community to come onto the JPL facility, view exhibits and displays, learn about JPL and speak with staff. An environmental exhibit focusing on Operable Unit #1 site activities and the Superfund process was prepared as part of the Open House. This exhibit provided a quick summary of the site history, information on the Superfund process, description of the site with the breakdown into three Operable Units, and status and timeline of site investigation activities. The Open House was publicized in the local papers and 7,000 - 10,000 people were expected to attend in 1993. The Open House provided a good opportunity to increase awareness of the Superfund site and plans for the site investigation activities.

Stand alone exhibits will continue to be created to elaborate on information specific to the technical milestones for each of the Operable Units. Information for the exhibits will be updated every six months to reflect the most current status of the site. For example, a second exhibit will be prepared by January 1994, a third exhibit by June 1994 and so on.

These additional exhibits will focus on relevant components of the Superfund process and most current status of site technical and community relations activities including, but not limited to: brief description of the risk assessment and its purpose, types of exposures that will be studied and the community relations activities held at the time period to inform and involve the public; proposed remediation strategies and concurrent community relations activities; and details on the selected remediation plan, tracking the progress of the remediation, and concurrent community relations activities. Regardless of the time period, the exhibits will always indicate a phone number to call for additional information and/or to provide comments.

Where

An exhibit will be located at JPL's Visitor Center. Currently, other suitable locations for hosting exhibits within the surrounding communities are being contacted. In addition, the availability of the exhibits to identify other locations that may be willing to house the exhibits is being advertised. Once the locations are established, the information on where the exhibits will be located will be distributed to the public.

Exhibits can also be used as temporary displays at the JPL Open House and special events such as summer fairs and environmental events. It is anticipated that exhibits will be rotated every three months throughout the communities of Pasadena, Altadena and La Cañada-Flintridge at sites willing to house the exhibits such as libraries and other venues.

6.2.2 Direct Mailings

Purpose

Throughout the site investigation and remediation process, there are specific times when direct mailings might be appropriate to inform individuals about the site status and community relations activities. Direct mailings may include fact sheets, or newsletters. Initially, information will be mailed out to all individuals and groups mentioned during the interview process, who were not contacted for an interview. In addition, key groups who were identified but not reached during the community interview process will be included in this direct initial mailing. Examples include community sports organizations, Urban League, recreational clubs, and local Boards of Health. The purpose of the mailing is to directly inform these groups of the site's existence, provide them with contacts for more information and to allow an opportunity for involvement.

The direct mail will also go out to a mailing list of those individuals who have requested ongoing information. A mailing list for the Superfund site was started in 1991. Mailing cards were used to solicit interested individual's names and addresses (a copy of this

card is included in Appendix D). The cards can be a part of the handouts at exhibits (described earlier).

To further its outreach efforts, a mailing list of all mailing addresses within 1/2 mile radius of the facility for inclusion on the mailing list was purchased (see Section 3.2.2, JPL Mailing List). Because site activities for all three Operable Units will occur over a several year period, the mailing list will be updated (additions and deletions) continuously through community relations activities that NASA hosts such as public meetings, the Information Repository, small group meetings, etc. When new residents are added to the mailing list, a letter along with the most recent fact sheet will be sent out to the resident.

When to Conduct

The initial direct mailing will go out during the initial fieldwork operations for the RI/FS Work Plan. As new names are added the mailing list, appropriate information for the time period, e.g., updated fact sheets, and community relations activities will be provided.

6.3 ACTIVITIES TO INFORM AND EDUCATE

A primary objective of this Community Relation Plan is to ensure that people have continuous and ready access to information about site activities. Because of the technical nature of the activities, it will be important to provide sufficient educational materials and forums for people to better understand the Superfund process and site technical information. By educating and informing the public, community members will be better prepared to provide input into the remediation process. Given the size and diversity of the population that exists near to JPL, a variety of different techniques will be used to inform and educate. In general, material will be made available as soon as possible. Prompt delivery of information will help ensure that NASA addresses trust and credibility concerns with the community.

The interviewees stated a preference for regular frequent updates of site status, after the community was brought up to speed on the site's existence and history. Virtually all interviewees wanted a regular communication even if there was no significant technical information to relay. Interviewees noted that the lack of communication could raise alarm and doubts as to whether the remediation had been dropped. Updates will be brief and succinct, especially if there is a lack of information to report. Fillers or created information will be avoided. Interviewees indicated that "filler" information would be a waste of the reader's time.

6.3.1 Briefings with Local Officials / Presentations

Purpose

The community relations activities will provide a smooth information flow from NASA to liaisons at local government agencies. Briefings allow the public officials to directly receive information about site activities. This two-way dialogue with public officials ensures that officials are kept up to date on the site and will facilitate their acting as intermediaries. At key decision points in the Superfund process or upon request, formal presentations will be made to public officials, or existing groups and organizations.

Description

Brief sessions will be held with local officials to address their need to be kept informed of significant technical findings and activities such as recent developments at the site, provision of background material on technical studies, results of field investigations and engineering designs, and reports on site remediation plans and remediation progress. Briefings prepare officials to answer questions from their constituents as the information becomes public and also allows for an exchange of information and concerns. The structure of the briefing will be to present a short statement about the site activities and answer questions about the statement made. Briefings for public officials will be complemented by activities which inform the general public, such as small group meetings or public meetings. Based on the 1993 interviews, briefings to government agencies will include: La Cañada City Council, Pasadena City Council, Altadena Town Council, Raymond Basin Management Board, and the Pasadena Health Department.

Presentations include formal speeches to clubs, civic or church organizations, schools or similar community groups. Potentially reaching many people at one time, the intent is to educate and improve public understanding of the problems associated with the site and explain how they will be addressed.

Presentations will include technical material with available supporting materials (slides, graphics, exhibits, etc.). The presentations will be designed to allow two-way dialogue by providing sufficient time for question and answers as well as general comments and concerns. Fact sheets, and other appropriate handouts will be available for participants to take home. Sensitivity about the need for a translator - either in announcing the availability of the presentations and/or at the presentation - will be addressed, see "Translations".

When to Conduct

Near start of the fieldwork for each Operable Unit, NASA will offer a briefing with local officials, if desired. At these meetings, or through phone calls, the need for future updates and a liaison with which to work to provide information will be assessed.

Formal presentations for public officials or groups and organizations will be offered at key technical milestones such as the release of the draft Feasibility Study report. Availability of the presentations will be announced through the newsletter and direct mailings to the mailing list. The presentation will be scheduled at convenient times for participants.

6.3.2 Coordination with Existing Groups / Publications

Purpose

Communication about the site will be enhanced by using established links to previously identified groups and media. It is important that the public have access to various credible sources of information which may differ for the three communities. To act as a vehicle to inform a community of site activities, existing agencies or community organizations need to be kept informed of the JPL site activities and have ready information for dissemination to the public.

Description

Using existing organizations and publications ensures a regular and attentive audience. NASA will have access to an established communications network, and less time and expense will be needed to expand mailing lists and organize meetings. Specific groups and/or individuals will be targeted to assist in outreach to inform and involve the public with the Superfund remediation process. These groups will have access to information on an as needed or by request basis. Understood to be independent, the groups may also point out other information needs to better inform and respond to community concerns. The specific groups will be those suggested by the interviewees that the community tends to call with environmental questions: Pasadena Health Department, Los Angeles County Health Department, Sierra Club, Raymond Basin Management Board, Parent-Teacher Associations, local teachers and local university scientists.

Existing community newsletters are another means of providing information and site updates to reach community members who don't consistently use the main media. An attempt will be made to provide information and site updates into existing community and organizational newsletters. These newsletters include: La Cañada-Flintridge Community Newsletter, Altadena's Monthly Newsletter, Pasadena In-Focus, Lincoln Avenue Water Company Newsletter and the Raymond Basin Management Board Newsletter. In addition to providing information about site and Operable Unit status, existing community newsletters will also be asked to announce upcoming community relations events.

When to Conduct

The groups mentioned above will be contacted at the onset of the fieldwork for each of the operable units and throughout the remediation process.

6.3.3 Fact Sheets

Purpose

To help inform the public of the investigatory findings and status of the remediation investigation/remedial actions, the community interviews strongly recommended the use of written material. Although a one-way communication tool, the majority of the interviewees stated a preference for fact sheets which they could read at their leisure in order to be informed and understand the issues associated with the site. Fact sheets usually consist of a brief report summarizing technical information needed to understand current or proposed activities of the remediation program.

Description

Two fact sheets have been prepared as of May 1993 (Fact Sheets #1 and #2). Both provide similar site history and general information about JPL. In addition, Fact Sheet #2 describes updated information about site activities following the placement on the NPL. Based on feedback from interviewees, future fact sheets will be briefer, less technical and more visually oriented. Fact sheets will focus on various brief subjects in order to have more, shorter sheets rather than a few, long ones. In addition, existing information developed by other sources, such as USEPA's fact sheets on the Superfund process, and *Technical Assistance Grant Program*, (see Section 8.0) etc. will be utilized. The Technical Assistance Grant Program provides funds for citizen groups to help them understand and comment on technical decisions relating to Superfund clean up actions. Sensitivity about the need to translate fact sheets in another language will be addressed, see "Translations".

When to Conduct

Fact sheets will be prepared as needed. Two fact sheets exist to date. Initially, the fact sheets will explain initial steps of the Superfund process such as a description of: the CRP, the Remedial Investigation, and the risk assessment. As the Superfund process continues, later fact sheets will describe the Feasibility Studies and remediation activities for each Operable Unit including the Proposed Plan, Remedial Design, Remedial Action. Glossaries will be incorporated, when needed, to help educate people on terms and concepts.

Educational fact sheets appropriate for technical aspects in the work will also be developed. For example, a fact sheet will focus on the concepts involved in the site investigation process such as hydrology, hydrogeology, soil sampling, other sampling

techniques, and information on types of chemicals expected to be found. Fact sheets will also be prepared to describe the risk assessment process, exposure routes, how toxicity information on health effects is determined, and how health and environmental risks are evaluated.

Where

Fact sheets will be available at all exhibits, and public meetings as space allows. They will be direct mailed to all neighbors within a 1/2 mile radius of JPL and any other individual on the mailing list. If you live in this area and are not currently on our mailing list and would like to receive information about the site, please call Kimberly Lievens, Acting Public Services Manager, at 818-354-0112, (also see Appendix A.2.). Any small, informal meetings or formal presentations will also have fact sheets available for distribution. Finally, local middle and high schools with an interest in being involved in the outreach activities will be provided fact sheets for students to read and to take home to their parents.

6.3.4 Newsletter

Purpose

To ensure continuous and ready access to information about the site, those people most affected or interested need a consistent source of information about the progress of the Superfund activities. Newsletters differ from fact sheets in that they are published on a regular basis (for example, quarterly) and may contain human interest and calendar of events information as well as technical information. Fact sheets are produced as needed and tend to focus on technical information. Direct mailings of brief summaries on the site's status and ongoing activities for the project will provide interested citizens and neighbors an opportunity to stay informed and get more information if desired.

Description

For those individuals and groups on the mailing list (which includes the neighbors within 1/2 mile radius), a newsletter will be provided every six months including brief updates on the site's status, timelines, public involvement (notices, meetings, hearings, small group meetings, presentations), remediation plans, and technical milestones. No fillers will be created to take up space in the event that there is no significant technical information to report. Instead, there will be a brief statement to that effect.

When to Conduct

The first newsletter will be distributed by the end of January 1994. Newsletters will then be produced every six months and will track the technical milestones for the project and will continue throughout the site investigation and remediation process.

6.3.5 News Releases

Purpose

The media is an established communication channel for information on environmental issues that quickly disseminates information to large groups of people. In addition, news releases may be used to announce community relations activities, report on the results of public meetings and describe how citizen concerns were considered in the response actions.

When to Conduct

News releases at all key technical milestones as well as significant technical findings and site information will be issued. In addition, news releases will be issued for key community relations activities to promote the event. News releases will target activities such as:

- Completion of the RI/FS for each Operable Unit;
- Identification of alternatives and preparation of Proposed Plan for each Operable Unit;
- Public Comment Period;
- Record of Decision.

Where

Releases discussing key technical milestones will be distributed to the main media such as the Los Angeles Times (San Gabriel zone), Pasadena Star-News, KNBC-TV, KFWB and KNX radio (see media list in Appendix A.11). News releases regarding community relations activities will be keyed to the local media such as the La Cañada Valley Sun, Pasadena In-Focus, Altadena's Monthly Newsletter, and Pasadena cable TV (KPAS, Channel 55). In addition, news releases of the community relations activities will be sent to the calendar of events at the main media such as the Los Angeles Times (San Gabriel zone), Pasadena Star-News, and KFWB radio. The Universe, intended for employees and contractors who work at JPL, will also publicize community relation activities.

6.3.6 Translations

Purpose

There is a need to ensure that all community members are informed about site activities and have the opportunity to participate in the decision-making process. Written

translations and use of translators may be needed to ensure that a greater number of community members can participate effectively in site activities and therefore provide input to decisions concerning the remediation process. This effort assures the nearby communities of NASA's sincerity in providing opportunity for public involvement.

Description

An initial review of demographic information for the area (see Section 3.1.2) has identified four major populations: White, Hispanic, African-American and Asian. The African-American community in Altadena is being targeted through placing an article in the Lincoln Avenue Water Company Newsletter, providing information on the site and asking for interested residents to place their names on the mailing list. In addition, the Lincoln Avenue Water Company mailing list was used to randomly send out one hundred letters to residents. Again these letters included information on the site, a copy of Fact Sheet #2 and asking residents to place their names on the mailing list.

NASA will continue to explore appropriate communication channels and audiences to understand the needs of non-English speaking residents in the surrounding communities. In addition, a sustained effort in targeting specific groups in the nearby communities that represent ethnic diversity will be continued. Some of these efforts will include contacting schools, youth leagues and churches by the end of 1993. Using these groups, an evaluation regarding the need for translations during certain community relations activities can be made by evaluating the percentage of non-English speaking people in the audience to be reached. If translations are needed, NASA will identify suitable translators with experience in translating technical information. Local community members may also be able to assist with translating.

If the need for translations exists, a written translation will be provided unless a verbal presentation would be more appropriate (e.g., the literacy rate or cultural preferences of the community). As needed, translations will accompany fact sheets, public notices, presentations, small group meetings, public hearings and news conferences.

6.3.7 Community Workshops

Purpose

Community workshops can improve the public's understanding of the site conditions and technical issues, familiarize citizens with key technical terms and concepts, allow two-way communication and prevent or correct misconceptions. Workshops can help identify citizen concerns and provide an opportunity for NASA to receive citizen comments.

Description

NASA will hold seminars for interested citizens to discuss site conditions and technical issues, to allow citizens an opportunity to comment on proposed response actions, and to provide information on the technical issues associated with the site and the Superfund process in general. Depending on the purpose of the individual workshop, experts who can explain issues such as the problems associated with hazardous substances and possible remedies for these problems may be invited. In general, topics which may be covered by the workshop can include: nature of the site problems, methods of containing and cleaning up the site, monitoring the clean up, identification of health or environmental problems, and method and format for receiving citizen comments on any proposed or ongoing site response activities.

When to Conduct

NASA will organize community workshops prior to key stages in the Superfund process such as development of the risk assessment, or release of the RI/FS Report for each Operable Unit. The workshops will be announced through a variety of community relations activities such as: publishing a notice in the La Cañada Valley Sun, Pasadena In-Focus, Altadena's Monthly Newsletter, Los Angeles Times (San Gabriel zone), Pasadena Star-News, and The Universe; announcing through exhibits, and newsletters and sending notice through direct mail to those on the mailing list. If an insufficient number of people register in advance, a small group meeting may be held instead.

Where

NASA will hold the workshops at a location and time convenient for local residents. Appropriate locations are currently being identified.

6.3.8 One on One Meetings

Purpose

One on one meetings between NASA and citizens from surrounding communities allows a chance for less formal communications to take place. In addition, NASA can address citizen concerns upon request.

Description

NASA will meet with individual citizens or small groups on a request basis. Meetings will take place in person either at JPL or at a location convenient to the citizens,

such as a private home. In addition, some requests may be handled by telephone (see Section 6.4.1).

When to Conduct

One on one meetings will take place as requested by concerned members of the public.

6.4 ACTIVITIES TO INVOLVE THE COMMUNITY

A primary objective of this CRP is also to provide opportunity for meaningful public involvement. Opportunities will be created for citizens to express their concerns and comments on the site decisions that may potentially affect their community. The 1991 and 1993 interviews indicated concerns regarding trust and credibility both with JPL, NASA, and government agencies. People are also concerned over the decision-making process used at the Superfund site. These concerns will be addressed through mechanisms that ensure open, straightforward dialogue between the surrounding communities and NASA. The dialogue provides an opportunity for the community to provide meaningful input and to be informed of decisions regarding the site's remediation.

6.4.1 Telephone Contact

Purpose

Citizens need to be able to ask questions and obtain information promptly about site activities. They also need to know who can provide them with information. Citizens need a relatively quick means of expressing their concerns and getting their questions answered. This quick response can help to reassure citizens that their concerns are being heard.

Description

A phone number is currently listed on fact sheets and in newspaper articles as a contact to call for questions or comments regarding the site (818-354-0112). The phone number is staffed 40 hours/week with an answering machine at off hours. Individuals providing telephone coverage are trained to answer types of questions routinely asked, where to go for additional information and to collect comments. A phone log will be used to record all calls, questions asked, response given, etc.

6.4.2 Small Group Meetings

Purpose

Meetings of small groups of citizens, held in local meeting places, provide an opportunity to get first hand information about the communities' issues and concerns. The

purpose of holding these meetings is to inform citizens and local public officials of site activities, answer questions, and clear up differing perceptions and understandings. At the same time, NASA can become more sensitive to citizen concerns and can establish rapport and a constructive working relationship.

Description

Although reaching only a limited number of citizens at a time, the primary benefit of small group meetings is the opportunity for two-way interaction between citizens, local officials and NASA. Not only will citizens be informed about site activities, but how citizens view the site can be learned as well. Small group meetings also add a personal dimension to what could otherwise be treated as a purely technical problem.

Attendance may consist of between five (5) and twenty (20) individuals. The meetings will take place at a location conducive to two-way interaction, such as a public library meeting room or private homes and at a time convenient for the community.

The agenda of the meetings will be developed based on the needs of the individuals who are participating in the specific meeting. After the meeting, follow through with the group will be completed to be sure their concerns were heard and addressed or if a need exists for further interaction.

When to Conduct

A concerted effort to announce the availability of small group meetings throughout the RI/FS process for each Operable Unit will be made. It is anticipated that small group meetings will be held if requested by a community member or if there is a finding that needs to be discussed with the community at the completion of the **RI/FS Report** prior to the Proposed Plan, or at any other points in the overall Superfund process. Availability of the meetings will be announced through the newsletter and direct mailings to the mailing list. Sensitivity about the need for a translator - either in announcing the availability of meetings and/or at the meeting - will be addressed, see "Translations".

6.5 ACTIVITIES TO EVALUATE THE COMMUNITY RELATIONS ACTIVITIES

The community relations activities will be evaluated throughout the site investigation and remediation process to assess their effectiveness. By monitoring the concerns of the members of the public in the nearby communities, community relations activities can be targeted as the needs and concerns of citizens change. Those activities which are not effective or no longer relevant may be dropped from the CRP pending input from the public. The Federal Facility Agreement does not require prior agency approval for any revisions to

the CRP. However, as the lead agency, NASA plans to coordinate the review of community relations activities with the regulatory agencies including any modifications to the CRP. The CRP may be formally revised after the Record of Decision for each Operable Unit. As needed, the revisions will address issues of concern for each Operable Unit, identify target audiences, and design additional community relations activities to meet specific Operable Unit needs. The CRP may also be revised at other times, if needed, as community concerns change focus or increase in intensity. Any revisions, including deleted community relations activities, would require an addendum to be issued to the CRP. A brief description of evaluation activities follows.

6.5.1 Community Relations Plan Revisions After Record Of Decision

Purpose and Description

Revising the CRP will help to ensure continuing response to citizen concerns during remedial design and action, and during work on each Operable Unit. Information obtained from the Responsiveness Summary will provide one means of assessing the nature and extent of citizen's concerns after the RI/FS for each Operable Unit is completed. Additional community interviews may be conducted, if needed. Community relations activities will be evaluated up to and including the Record of Decision. Additional community relations activities may be developed as needed to address issues emerging during the Remedial Design / Remedial Action. The community relations activities that were not effective or no longer needed will be discontinued. Also, any information that may have changed (e.g., elected officials, points of contact, addresses, phone numbers) during the course of the RI/FS will be updated. Each time the Community Relations Plan is revised, the updated version will be placed in the Information Repositories and Administrative Record after regulatory approval.

When to Conduct

In the early stages of remedial design for each Operable Unit or at the start of another Operable Unit, the CRP may be revised to incorporate new information, reflect changes in community concerns and prepare for community activities during the remedial design and remedial action.

6.5.2 Meeting and Activity Evaluation Forms

A form will be developed to distribute to participants at appropriate community relations activities, such as small group meetings, presentations, public meetings, etc. to solicit feedback on what took place. These forms will be utilized to monitor effectiveness of

specific activities and to make any changes or revisions. A similar evaluation card will be used to evaluate other activities such as the site tours, fact sheets, exhibits, etc. which the respondents can hand back or return by mail.

6.5.3 Evaluation Monitoring

Mechanisms for evaluating the effectiveness of community relations activities throughout the remediation process will be developed. Techniques will include monitoring: the news coverage for number, length, and tone of reports; specific public events (i.e., public meetings, presentations) for the number of people attending and the types of interests that the attending community express; distribution of fact sheets and mailing cards for the number and location; and phone calls for the number and tone.

6.6 SCHEDULE

Community relations activities will be conducted under the oversight of USEPA, DTSC and RWQCB. Table 2 presents an anticipated schedule of community relations activities based on technical milestones for all Operable Units. Work has been initiated on OU #1. A draft RI/FS workplan has been prepared for agency review. During the investigation and remediation activities, the community relations activities will be evaluated in terms of their effectiveness and changing community concerns. Any revisions to the community relations plan may revise this schedule of community relations activities. In addition, any changes to the community relations plan will be documented in an addendum to the Plan and will be available in the Information Repository upon agency review and acceptance.

**Table 2 COMMUNITY RELATIONS ACTIVITIES FOR OPERABLE UNITS #1, #2 and #3
OVERALL SUPERFUND PROCESS**

Technical Milestones							
Community Relations Activities	RI/FS Work Plan	Conduct RI/FS RI RA FS	Completion of RI/FS Report	Identification of Preferred Alternative & Proposed Plan	Preparation of ROD	Sign ROD	Remedial Design
CRP	X						
REQUIRED BY CERCLA							
Informational Repositories	X <-----	Information included as available ----->					
Administrative Record	X <-----	Information included as available ----->					
Public Notices	X			X	X		
Public Comment Periods				X			
Public Meetings				X		X	
Responsiveness Summary					X <-----	>X	
BUILD AWARENESS							
Exhibits	X <-----	Maintain and update as needed ----->					
Direct Mailings	X		X		X		X
INFORM AND EDUCATE							
Briefings / Presentations	X <-----	Periodic as Requested ----->					
Existing Groups / Publications	X <-----	Information provided as available ----->					
Fact Sheets		X X X		X	X		X
Newsletter		X <-----	Quarterly update on status ----->				
News Releases	X <-----	Provide as needed ----->		X <-----	Provide as needed ----->		
Site Tours	X		X	X			X
Translations	X <-----	Address and provide as needed ----->					
Community Workshops	X <-----	Periodic as Needed ----->					
One on One Meetings	X <-----	Provide as Requested ----->					
INVOLVE							
Telephone Contact	X <-----	Maintain ----->					
Small Group Meetings	X		X	X			
EVALUATE							
Revise CRP	X <-----	Revise and update as needed ----->					

7.0 CONTENTS OF ADMINISTRATIVE RECORD

The Administrative Record is required by CERCLA and will be included in the same location as the Information Repository at the Pasadena Central Library. The Administrative Record is the legal file of documents upon which the selection of a response action will be based and on which judicial revision of response actions will be based. It must be available to the public at or near the site. See Section 6.0 for more details on the Administrative Record.

8.0 TECHNICAL ASSISTANCE GRANT PROGRAM

8.1 INTRODUCTION

Recognizing the importance of community involvement and the need for citizens living near Superfund sites to be well-informed, Congress included provisions in Superfund Amendments and Reauthorization Act to establish a Technical Assistance Grant (TAG) Program intended to foster informed public involvement in decisions relating to site-specific remediation strategies under Superfund.

In addition to regulatory and legal requirements, decisions concerning remediation initiatives at Superfund sites must take into account a range of technical considerations. These might include:

- Analytical profiles of conditions at the site;
- The nature of the wastes involved;
- The kinds of technology available for performing the necessary remediation actions.

The TAG Program provides funds for qualified citizen's groups to hire independent technical advisors to help them understand and comment on such technical factors in remediation decisions affecting them. Information in the form of a fact sheet describing the TAG Program will be in the Information Repositories. More information and TAG application materials are available from the USEPA Region IX office.

8.2 BASIC PROVISIONS OF THE TECHNICAL ASSISTANCE GRANTS PROGRAM

- Grants of up to \$50,000 are available to community groups for the purpose of hiring technical advisors to help citizens understand and interpret site-related technical information.
- The group must cover 20% of the total costs of the project to be supported by TAG funds.
- The group must budget the expenditure of grant funds to cover the entire remediation period (which averages six (6) years).
- There may be only one TAG award per Superfund site; however, the grant may be renewed.

8.3 HOW TO APPLY FOR A GRANT

Applications are made to USEPA which is the government agency responsible for implementation of the TAG program. When applying for a TAG, a group must provide information to USEPA to determine if the group meets specific administrative and management requirements. The application also must include a description of the group's history, goals, and

plans for using the technical funds. Factors that are particularly important in this evaluation process include:

- The group's ability to manage the grant in compliance with USEPA grant and procurement regulations.
- The degree to which the group members' health, economic well-being, and enjoyment of the environment are adversely affected by a hazardous waste site.
- The group's commitment and ability to share the information provided by the technical advisor with others in the community.
- Broad representation of affected groups and individuals in the community.
- Whether the applicant group is nonprofit and incorporated for TAG purposes. (Only incorporated groups may receive grants. Groups must either be incorporated specifically for the purpose of addressing site-related problems or incorporated for broader purposes if the group has a substantial history of involvement at the site).

In general, a group must demonstrate that it is aware of the time commitment, resources, and decisions needed to successfully manage a TAG. Applicant groups should consult The Citizens' Guidance Manual for the Technical Assistance Grant Program (OSWER Directive 9230.1-03), for detailed instructions on how to present such information.

The 1986 Superfund amendments state that only one TAG may be awarded per site. To ensure that all eligible groups have equal access to technical assistance and an equal opportunity to compete for a single available grant (if a coalition of groups proves to be impossible), USEPA has established a formal notification process, which includes the following steps:

- 1) Groups wishing to apply for a technical assistance grant must first submit to USEPA a short letter stating their group's desire to apply and naming the site(s) involved. If site project work is already underway or scheduled to begin, USEPA will provide formal notice through mailings, meetings, or other public notices to other interested parties that a grant for the site soon may be awarded.
- 2) Other potential applicants would then have 30 days to contact the original applicant to form a coalition.
- 3) If potential applicants are unable to form a coalition, they will notify USEPA within this time period and USEPA will accept separate applications from all interested groups for an additional 30-day period.
- 4) USEPA would then award a grant to the application that best meets the requirements described above.

The maximum grant that can be awarded to any group is \$50,000. The actual amount depends on what the group intends to accomplish. A group's minimum contribution of 20% of the total costs of the technical assistance project can be covered with cash and/or "in-kind" contributions, such as office supplies or services provided by the group. These services might include, for example, publication of a newsletter or the time an accountant donates to managing the group's finances. The value of donated professional services is determined based on rates charged for similar work in the area.

In special cases where an applicant group intends to apply for a single grant covering multiple sites in close proximity to each other, USEPA can allow a waiver of the \$50,000 grant limit. In such cases, however, the recipient cannot receive more than \$50,000 for each site to which it intends to apply funds (for example, 3 Superfund sites X \$50,000 = maximum grant amount of \$150,000).

A free application package is available from USEPA which includes all the necessary application and certification forms as well as a copy of The Citizens' Guidance Manual for the Technical Assistance Grant Program. This manual contains sample forms with detailed instructions to assist in the preparation of a TAG application.

For further information on the application process, or any aspect of the TAG program, please contact:

Dorothy Wilson
Region 9 TAG Coordinator
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, California 94105
(415) 744-2179
1-800-231-3075

Information on the TAG Program is also available in the Information Repositories (See Appendix E).

APPENDIX A.

LIST OF KEY CONTACTS AND INTERESTED PARTIES

1. NATIONAL AERONAUTICS AND SPACE ADMINISTRATION CONTACTS

Daniel S. Goldin, Administrator

Code A
National Aeronautics and Space Administration
Washington, DC 20546
(202) 358-1010

Robert E. Hammond

Code JXG
National Aeronautics and Space Administration
Washington, DC 20546
(202) 358-1095

Joyce Jatko

Code JXG
National Aeronautics and Space Administration
Washington, DC 20546
(202) 358-0115

Dora Huff, NASA Contracting Officer

NASA Management Office
JPL
4800 Oak Grove Boulevard
Pasadena, California 91109
(818) 354-6315

2. NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DESIGNATED CONTRACTOR REPRESENTATIVES

Charles Buril, P.E., Acting Superfund Project Manager*

JPL
4800 Oak Grove Boulevard
Pasadena, California 91109
(818) 354-0180

* - Mr. Buril has been designated by NASA as the Acting Remedial Project Manager for the site pending the selection of a NASA Remedial Project Manager.

Kimberly Lievens, Acting Manager, Public Services Office*

JPL
4800 Oak Grove Boulevard
Pasadena, California 91109
(818) 354-0112

3. STATE OFFICIALS

California Department of Toxic Substances Control

1011 North Grandview Avenue
Glendale, California 91201

Hamid Saebfar, Acting Branch Chief
(818) 551-2800

Penny Nakashima, JPL Remedial Project Manager
(818) 551-2881

California Regional Water Quality Control Board, Los Angeles Region

101 Center Street
Monterey Park, California 91754

S. Gherelli, Director
(213) 266-7500

Gail Madyun, JPL Remedial Project Manager
(213) 266-7540

Department of Health Services

714 P Street, Room 1253
Sacramento, California 95814

Dr. Molly Joel Coye, Director
(916) 657-1425

4. U.S. EPA REGION IX REPRESENTATIVES

United States Environmental Protection Agency
75 Hawthorne Street
San Francisco, California 94105
1-800-231-3075

Michelle Schutz, Remedial Project Manager
JPL Site
(415) 744-2413

* - Ms. Lievens has been designated by NASA as primary contact person within the Public Services Office located at JPL for the Superfund action at JPL.

Dorothy Wilson, Community Involvement Coordinator
JPL Site
(415) 744-2179

5. FEDERAL ELECTED OFFICIALS

Carlos Moorhead, U.S. Representative

Represents the 27th Congressional District (Altadena, La Cañada-Flintridge, parts of Pasadena)

Washington, DC Office

2346 Rayburn House Office Building
Washington, DC 20515-0527
(202) 225-4176

District Office

District Director: Peter Musurlian
301 E. Colorado Boulevard, Room 618
Pasadena, California 91101
(818) 792-6168

David Dreier, U.S. Representative

Represents the 28th Congressional District (parts of Pasadena)

Washington, DC Office

409 Cannon House Office Building
Washington, DC 20510-0528
(202) 225-2305

District Office

District Field Representative: Mark Harmsen
112 North 2nd Avenue
Covina, California 91723
(818) 339-9078

Barbara Boxer, U.S. Senator

Washington, DC Office

112 Hart
Senate Office Building
Washington, DC 20510-0505
(202) 224-3553

District Office

Suite 240
1700 Montgomery Street
San Francisco, California 94111
(415) 403-0100

Diane Fienstein, U.S. Senator

Washington, DC Office

331 Hart
Senate Office Building
Washington, DC 20510-0504
(202) 224-3841

District Office

Suite 305
1700 Montgomery Street
San Francisco, California 94111
(415) 249-4777

6. STATE ELECTED OFFICIALS

Governor Pete Wilson

300 South Spring Street, 16th Floor, South Tower
Los Angeles, California 90013
(213) 897-0322

Bill Hoge, State Assemblyman

Represents the 44th Assembly District (includes Pasadena, Altadena, La Cañada-Flintridge)

District Chief of Staff: George Opacic
1276 East Colorado Boulevard, #203
Pasadena, California 91106
(818) 577-4470

Newton R. Russell, State Senator

Represents the 21st Senate District (includes Pasadena, Altadena, La Cañada-Flintridge)

District Chief of Staff: Wellington Love
401 North Brand, #424
Glendale, California 91203
(818) 247-7021

Patrick J. Nolan, State Assemblyman

Represents the 43rd District

143 South Glendale Avenue, #208
Glendale, California 91205
(818) 240-6330

7. COUNTY OFFICIALS

Michael Antonovich, Supervisor - County of Los Angeles
5th District
Hall of Administration
500 West Temple, #869
Los Angeles, California 90012
(213) 974-5555

OR

215 North Marengo Avenue, #120
Pasadena, California 91101
(818) 356-5407

Board of Supervisors for Los Angeles County

Ed Edelman, Chairman

Gloria Molina

Yvonne Breathwaite-Burke

Dean Dana

Michael Antonovich

Los Angeles County Department of Health Services

Robert C. Gates, Director
313 North Figueroa Street, Room 912
Los Angeles, California 90012
(213) 240-8101

8. MAYORS AND LOCAL OFFICIALS OF SURROUNDING COMMUNITIES

City of Pasadena

Rick Cole, Mayor
2nd District
100 North Garfield Avenue, #237
Pasadena, California 91109
(818) 351-9373

City Council Members

100 North Garfield Avenue, #237
Pasadena, California 91109
(818) 405-4311

Isaac Richard
1st District

Chris Holden
3rd District

William Paparian
4th District

Bill Crowfoot
5th District

Kathryn Nack - Vice Mayor
6th District

William E. Thomson, Jr.
7th District

Pasadena Health Department

100 North Garfield, Room 136
P.O. Box 7115
Pasadena, California 91109

Dr. Jacqueline, Stiff, Director
(818) 405-4392

Mel Lim, JPL Site Liaison
(818) 405-4390

Town of Altadena

600 East Mariposa
Altadena, California 91001
(818) 798-3616

Kathy Klomburg, Chairman

Cue MacKenzie, Vice Chairman

Walter Martin

Gene Coffman

Leatrice Erlander

City of La Cañada-Flintridge

1327 Foothill Boulevard
La Cañada, California 91011
(818) 790-8880

Gabrielle Pryor, City Manager

City Council

James Edwards, Mayor

Dave Spence, Mayor Pro-Tem

Joan Feehan

Jack Hastings

Carol Liu

Public Works Department

1327 Foothill Boulevard
La Cañada-Flintridge, California 91011-2137

Fullmer Chapman, Director
(818) 790-8880

9. OTHER FEDERAL AGENCY REPRESENTATIVES

Agency for Toxic Substances and Disease Registry (ATSDR)

Lynn G. Berlad
ATSDR
75 Hawthorne Street
San Francisco, California 94105
(415) 744-2220

Lydia Ogden Askew (ATSDR/DHAC (E32)
Community Involvement Liaison
1600 Clifton Road, NE
Atlanta, Georgia 30333
(404) 330-9543 (24 hour)

10. AREA CHAMBERS OF COMMERCE

City of Pasadena

117 East Colorado Boulevard, Suite 100
Pasadena, California 91105
(818) 795-3355

Steve Ralph, President

Glen Warriner, Secretary/Treasurer

Bruce D. Ackerman, Chief Executive Officer

Town of Altadena

2246 North Lake Avenue
Altadena, California 91001
(818) 794-3988

Leatrice Erlander, President

Steven Durham, Vice President

Josie Marquez, Secretary

Lita Murray, Treasurer

City of La Cañada-Flintridge

4529 Angeles Crest Highway, Suite 102
La Cañada-Flintridge, California 91011
(818) 790-4289

Barbara Christiansen, Executive Director

Connie Martin, President

Penny Stevenson, Secretary

Svend Jensen, Treasurer

11. MEDIA REPRESENTATIVES

Wire Services

City News Service
6255 Sunset Boulevard, Suite 1905
Los Angeles, California 90028
(213) 461-1453

Newspapers / Magazines

Los Angeles Daily News
21221 Oxnard Street
Woodland Hills, California 91367
Main desk (818) 713-3131
City desk (818) 713-3636

Los Angeles Times
Times Mirror Square
Los Angeles, California 90053
(213) 237-5140

Pasadena Star-News
525 East Colorado Boulevard
Pasadena, California 91009
(818) 578-6475

Foothill Leader
P.O. Box 963
Montrose, California 91020
(818) 249-8090

La Cañada Valley Sun
1 Valley Sun Lane
La Cañada, California 91011
(818) 790-8774

Television

KCBS-TV (2) (CBS)
6121 Sunset Boulevard
Los Angeles, California 90028
Local (213) 460-3000
Network (213) 460-3733

KNBC-TV (4) (NBC)
3000 Alameda Avenue
Burbank, California 91523
Local (818) 840-4321
Network (818) 840-4434

KTLA-TV (5)
5800 Sunset Boulevard
Los Angeles, California 90028
(213) 460-5500

KABC-TV (7) (ABC)
4151 Prospect Avenue
Los Angeles, California 90027
(310) 557-7777

KCAL-TV
5515 Melrose Avenue
Los Angeles, California 90038
(213) 960-3809

KTTV-TV (11) (FOX)
5746 Sunset Boulevard
Los Angeles, California 90028
(213) 856-1236

KCOP-TV (13)
915 North La Brea Avenue
Los Angeles, California 90038
(213) 851-1000

Radio

KFWB Radio
(213) 462-5392

KNX Radio
(213) 460-3343

APPENDIX B.

ACRONYMS AND ABBREVIATIONS

CalTech	California Institute of Technology
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR	Code of Federal Regulations
CRP	Community Relations Plan
DTSC	California Department of Toxic Substances Control
ESI	Expanded Site Investigation
FFA	Federal Facility Agreement
HRS	Hazard Ranking System
JPL	Jet Propulsion Laboratory
NASA	National Aeronautics and Space Administration
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priority List
OU _s	Operable Units
PA	Preliminary Assessment
RA	Remedial Action
RD	Remedial Design
RI/FS	Remedial Investigation / Feasibility Study
ROD	Record of Decision
RWQCB	California Regional Water Quality Control Board, Los Angeles Region
SARA	Superfund Amendments and Reauthorization Act of 1986
SI	Site Investigation
TAG	Technical Assistance Grant
USEPA	U.S. Environmental Protection Agency
VOC _s	Volatile Organic Compounds

APPENDIX C.

GLOSSARY

NOTE: Those words that are underlined are defined elsewhere in the Glossary.

Administrative Record: A file that is maintained, and contains all information used, by the lead agency to make its decision on the selection of a response action under CERCLA. This file is to be available for public review and a copy established at or near the site, usually at one of the Information Repositories. A duplicate file is held in a central location, such as a Regional Office or State.

Alluvial: Deposits or soil washed down from high ground, such as mountain, by the action of water currents.

Aquifer: A layer of rock or soil below the ground surface that can supply usable quantities of water to wells and springs. Aquifers can be a source of water for drinking and other uses.

Carbon Adsorption: A treatment system where contaminants are removed from groundwater or surface water when the water is forced through tanks containing activated carbon, a treated material that attracts the contaminants.

Community Relations Plan (CRP): Formal plan for USEPA community relations activities at a Superfund site. The CRP is designed to ensure citizen opportunities for public involvement at the site, determine activities that will provide for such involvement, and allow citizens the opportunity to learn about the site.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA): A Federal law passed in 1980 and modified in 1986 by the Superfund Amendments and Reauthorization Act. The Acts created a specific tax that goes into the Hazardous Substance Superfund, which is a trust fund and is commonly known as Superfund. The Superfund funds the investigation and clean up of abandoned or uncontrolled hazardous waste sites. Under the program, USEPA can either:

- Pay for site clean up when parties responsible for the contamination cannot be located or are unwilling or unable to perform the work, and to seek reimbursement of its costs from responsible parties; or
- Take legal action to force parties responsible for site contamination to clean up the site or pay back the Federal Government for the cost of the clean up.

Downgradient: Used to describe a location relevant to the flow of groundwater (water moving below the surface of the ground). A point that is downgradient is a location in the direction in which the groundwater is flowing. Downgradient is similar to the term - downstream - used to describe the flow of surface water, such as a stream or river.

Expanded Site Investigation (ESI): The collection of additional information from a site to determine the extent and severity of hazards posed by the site. It follows and is more extensive than a site inspection done prior to ranking of the site for possible listing as a Superfund site.

Feasibility Study (FS): See Remedial Investigation/Feasibility Study.

Hazardous Ranking System (HRS): A scoring system used to evaluate potential relative risks to public health and the environment from releases or threatened releases of hazardous substances. USEPA and States use the HRS to calculate a site score (0 to 100) based on the actual or potential release of hazardous substances from a site through air, surface water, or groundwater. This score is the primary factor used to decide if a hazardous waste site should be placed on the National Priorities List.

Information Repository: A file containing current information, technical reports, reference documents, and Technical Assistance Grant application information on a Superfund site. Any record that documents a decision that affects the Superfund process will be included in the Information Repository. The information repository is usually located in a public building that is convenient for local residents, such as a public school, city hall, or library.

Institutional Controls: Refers to legal, non-engineering methods used to prevent or restrict use of, or access to, contamination remaining after the remedy has been implemented. In general, institutional controls may take the form of rules, regulations, laws, or covenants such as county or city ordinances, building permits, or other appropriate measures, as necessary.

National Oil and Hazardous Substances Pollution Contingency Plan (NCP): A body of federal regulations governing the implementation of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). The NCP describes how site activities will be performed.

National Priorities List (NPL): USEPA's list of the most serious uncontrolled or abandoned hazardous waste sites identified for remedial response. The list is based, primarily, on the score a site receives on the Hazard Ranking System. EPA is required to update the NPL at least once a year.

Operable Unit (OU): An action taken as one part of an overall site clean up. For example, a carbon adsorption system could be installed to halt rapidly spreading groundwater contaminants during the more comprehensive and long-term Remedial Investigation/Feasibility Study. A number of operable units can be used in the course of a site clean up.

Preferred Alternative: The remedial alternative proposed by the lead agency for public comment, as described in the Proposed Plan.

Preliminary Assessment (PA): The process of collecting and reviewing available information about a known or suspected hazardous waste site or release. USEPA or States use this information to determine if the site requires further study. If further study is needed, a site investigation is undertaken.

Proposed Plan: A public participation requirement of CERCLA in which USEPA summarizes for the public the preferred clean up strategy, rationale for the preference, alternatives presented in the detailed analysis of the Remedial Investigation/Feasibility Study, and waivers to clean up standards of § 121(d)(4) that may be proposed. This may be prepared either as a fact sheet or a separate document. In either case, it must actively solicit public review and comment on all alternatives under consideration.

Record of Decision (ROD): A public document that explains which clean up alternative will be used. The record of decision is based on information and technical

analysis generated during the Remedial Investigation/Feasibility Study and consideration of public comments and community concerns.

Remedial Action (RA): The actual construction or implementation phase that follows the Remedial Design of the selected clean up alternative at a site.

Remedial Design (RD): An engineering phase that follows the Record of Decision when technical drawings and specifications are developed for the subsequent Remedial Action at a site.

Remedial Investigation / Feasibility Study (RI/FS): Investigative and analytical studies usually performed at the same time in an interactive, iterative process, and together referred to as the "RI/FS". They are intended to:

- Gather the data necessary to determine the type and extent of contamination at a Superfund site;
- Establish criteria for cleaning up the site;
- Identify and screen clean up alternatives for Remedial Action; and
- Analyze in detail the technology and costs of the alternatives.

Remedial Response: A long-term action that stops or substantially reduces a release or threatened release of hazardous substances that is serious but does not pose an immediate threat to public health and/or the environment.

Remediation: Actions taken to deal with a release or threatened release of hazardous substances that could affect public health, welfare or the environment. The term "remediation" is often used broadly to describe various Superfund response actions, such as a removal action or a remedial response.

Removal Action: An immediate action taken over the short-term to address a release or threatened release of hazardous substances.

Response Action: A CERCLA-authorized action at a Superfund site involving either a short-term removal action or a long-term remedial response that may include, but is not limited to, the following activities:

- Removing hazardous materials from a site to an approved, licensed hazardous waste facility for treatment, containment, or destruction;
- Containing the waste safely on-site to eliminate further problems;
- Destroying or treating the waste on-site using incineration or other technologies; and
- Identifying and removing the source of groundwater contamination and halting further movement of the contaminants.

RI/FS Report: All of the pertinent information of the remedial investigation/feasibility study (RI/FS).

RI/FS Work Plan: Outline of how and when the remedial investigation/feasibility study (RI/FS) will be conducted.

Risk Assessment: A study conducted simultaneously with the remedial investigation that describes the risk posed to public health, welfare, and the environment at a Superfund site.

Site Discovery: The ways that EPA learns of conditions that could present a risk to human health and the environment, such as citizen complaints of an unusual odor or of a fire.

Site Investigation (SI): A technical phase that follows a Preliminary Assessment designed to collect more extensive information on a hazardous waste site. The information is used to score the site using the Hazard Ranking System to determine whether response action is needed.

Superfund: The common name used for the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) or the trust fund established by CERCLA.

Superfund Amendments and Reauthorization Act of 1986 (SARA): Modifications to CERCLA enacted on October 17, 1986.

Technical Assistance Grant Program (TAG): A grant program that provides funds for qualified citizens' groups to hire independent technical advisors to help them understand and comment on technical decisions relating to Superfund clean up actions.

Trust Fund: A Fund set up under the Comprehensive Environmental Response, Compensation, and Liability Act to help pay for clean up of hazardous waste sites and to take legal action to force those responsible for the site to clean them up.

Upgradient: Used to describe a location relevant to the flow of groundwater (water moving below the surface of the ground). A point that is upgradient is a location opposite from the direction in which the groundwater is flowing. Upgradient is similar to the term - upstream - used to describe the flow of surface water, such as a stream or river.

Volatile Organic Compound (VOC): An organic (carbon-containing) compound that evaporates (volatilizes) readily at room temperature.

APPENDIX D.

EXAMPLE OF JPL MAILING CARD

To inform our neighbors about the progress of our environmental cleanup effort and our community involvement, the Public Services Office of the Jet Propulsion Laboratory is establishing a mailing list. If you would like to be included, please complete the bottom portion (reverse side) of this card and return it to JPL. Thank you.

Kimberly Liveness
 Kimberly Liveness
 Public Services Office
 (619) 364-0112

REF: 1000 271 2073 001

PLACE
 STAMP
 HERE

Jet Propulsion Laboratory
 Public Services Office
 4800 Oak Grove Drive
 Pasadena, CA 91109-6099

Attn: Kimberly Liveness, MS 160-205

M
 ailing List
 JPL Public Services Office
 (Please type or print)

Name _____
 Last First Middle Initial
 Occupation _____
 Mailing Address _____
 Number Street City State Zip
 Phone () _____
 Daytime Evening

Jet Propulsion Laboratory
 Public Services Office
 Mail Stop 160-205
 4800 Oak Grove Drive
 Pasadena, CA 91109-6099

271 2073 001

APPENDIX E.

INFORMATION REPOSITORIES

Pasadena Central Library

285 East Walnut

Pasadena, California 91101

(818) 405-4057

Contact: Elaine Zorbas, Head of Research

Handicapped Accessible: Yes

Hours of Availability: Monday: Closed

Tuesday - Thursday: 12 noon to 9 PM

Friday: 12 noon to 6 PM

Saturday: 1 PM to 5 PM

La Cañada-Flintridge Public Library

4545 West Oakwood Avenue

La Cañada, California 91011

(818) 790-3330

Contact: Ms. Berry Shemaria

Handicapped Accessible: Yes

Hours of Availability: Monday to Wednesday: 10 AM to 8 PM

Thursday to Friday: 10 AM to 5 PM

Saturday: 11 AM to 5 PM

Altadena Public Library

600 East Mariposa Street

Altadena, California 91011

(818) 798-0833 or 798-0834

Contact: William Tema, District Librarian

Handicapped Accessible: Yes

Hours of Availability: Monday to Tuesday: 10 AM to 9 PM

Wednesday to Saturday: 10 AM to 6 PM

Sunday: 1 PM to 5 PM

JPL Library

4800 Oak Grove Drive

Pasadena, California 91109

(818) 354-4200

Contact: Judy Castagno

Handicapped Accessible: Yes

Hours of Availability: Monday to Friday: 7:30 AM to 4:45 PM

Available to JPL employees, retirees and contractors only.

APPENDIX F.

PROPOSED LOCATIONS OF PUBLIC MEETING PLACES

von Karman Auditorium
Jet Propulsion Laboratory
4800 Oak Grove Drive
Pasadena, California 91101
(818) 354-6170
Contact: Receptionist
Handicapped Accessible: Yes

Ramo Auditorium
California Institute of Technology
330 South Chester Avenue
Pasadena, California 91011
(818) 395-4638
Contact: Jerry Willis
Handicapped Accessible: Yes

NASA also hopes to be able to host public meetings at the following locations:

Charles W. Eliot Middle School Auditorium
2184 North Lake Avenue
Altadena, California
(818) 794-7121
Contact: Barbara McCutchan
Handicapped Accessible: Yes

La Cañada High School Auditorium
4463 Oak Grove Drive
La Cañada, California 91011
(818) 952-4273
Contact: Jane Wells
Handicapped Accessible: Yes

APPENDIX G.

LIST OF 1993 INTERVIEW QUESTIONS

1. How familiar are you with JPL?
2. Have you read or heard anything recently about JPL? What? Where?
3. What current concerns do you have about the environment in your area?

How would you compare it to other areas - do you think you have relatively more or less the same amount of environmental problems?

4. Are you familiar with the environmental problems at JPL?
5. Are you familiar with the Superfund law for investigation and clean up of hazardous waste sites?

Provide a brief description of Superfund and the Superfund process

6. Have you had any involvement in environmental issues (local, state-wide, or national)? In the issues at JPL?
7. Do you have any specific concerns regarding the Superfund site at JPL?
8. Have you talked with other people about the site - friends, neighbors, family? If so, what are their concerns?
9. Have you tried to obtain any information about the site?

Who did you contact?

What information did you receive? Did it answer your questions?

10. What are the most important things the community in general needs to know about the site and activities at JPL?
11. What types of information would you like about: site history, current status, or clean up activities?
12. What other kinds of information do you think you'd like in the future?
13. How do you want to get that information and how frequently? (Verbal, telephone or meetings, print, mailings, newspaper ads, etc.)
14. What form would you suggest for information? Print? Hotlines? Others?
15. What locations are the most accessible for the information repositories?
16. Who do you rely on for information about environmental health and safety issues? Are there any particular individuals, groups or types of media (e.g., print, broadcast, TV)?

17. On a scale of 1 - 10, how would you rate the threat to health from activities or past activities at JPL?
18. On a scale of 1 - 10, how would you rate the benefits from activities at JPL?
19. What is your background?
20. Should there be a fact sheet of some other information on basic terms and concepts such as.....?
21. Is there anything else you'd like to talk about regarding the site which hasn't yet been mentioned?
22. Can you suggest other individuals or groups that should be contacted?